THE LIBRARY OF CONGRESS
1800

06 - 40190

METHODS OF INSTRUCTION

138

AND

ORGANIZATION

OF THE

SCHOOLS OF GERMANY

FOR THE USE OF

AMERICAN TEACHERS AND NORMAL SCHOOLS

BY

JOHN T. PRINCE PH.D.

AGENT OF MASSACHUSETTS BOARD OF EDUCATION, AUTHOR OF "COURSES OF STUDIES AND METHODS OF TEACHING"

FEB 6 1892
3232

BOSTON

LEE AND SHEPARD PUBLISHERS

10 MILK STREET

1892

Copyright, 1891, by John T. Prince

All Rights Reserved

Methods of Instruction and Organization of the Schools of Germany

PREFACE

THIS book is intended to give a general idea of the organization of the schools of Germany, and such a view of their inner working as may be suggestive and helpful to teachers. If the purpose were to give a complete report of the schools, to show their character as a whole, and to pass judgment upon them, it would be necessary to give fuller extracts from existing laws than are given here, and to go into details of management and methods which the limits of a single volume would not permit.

The aim has been to give important features of organization only, and to confine the statement of methods to what is best and most useful for American teachers to know. Nearly every school exercise noted is one which has a special point of value to teachers. Unprofitable details of lessons, and, so far as possible, repetitions of the same or similar work of teachers, have been avoided.

The fragmentary and incomplete character of the notes of lessons heard, is accounted for from the fact that they were copied from my note-book almost exactly as

they were written in the recitation-room. I preferred not to revise them or put them in more complete form lest I should give an incorrect report of what I saw.

Information relating to statistics and organization of the schools has been derived from several sources; from teachers and other school officers, and from various school laws, courses of study, catalogues, etc., including Sander's *Lexikon der Pädagogik*, 1889; Giebe's *Verordnungen betreffend das gesammte Volksschulwesen in Preussen* (Giebe's *Verordnungen*); *Preussische Statistik* 101 (*Preus. Stat.* 101); Kockle's *Lehrplan für die einfachen Volksschulen des Königreichs Sachsen, Dresden*, 1890 (*Lehrplan Sachsen*); *Pädagogischer Yahresbericht*, 1889, *von A. Richter* (*Päd. Yahresbericht*); *Gesetz ueber die Gymnasien, Realschulen und Seminare, von R. Götz, Leipzig*, 1877 (Götz's *Gesetz*); to which reference is made in abbreviated forms as noted in the parentheses. Other references are given in full.

Reference to sources of information has not in all cases been made, owing to the fact that some of the notes were taken with no thought of putting them in permanent form.

Some of the chapters consist of a revision and extension of articles which originally appeared in the *New England Journal of Education*, *Atlantic Monthly*, and *Educational Review*, whose publishers have generously consented to their use in the present form.

Special acknowledgments are due to my colleague,

Prof. George A. Walton, who has kindly assisted in reading and correcting the proof-sheets; also, for a similar service, to Dr. Larkin Dunton, Head Master of the Boston Normal School, and Miss Margaret K. Smith, of the Oswego, N. Y., Normal School, whose knowledge of the German schools has enabled them to give valuable suggestions. With their approval of the book so far as its general accuracy is concerned, it is offered to the profession with the confident belief that it will meet the wants of those who desire material in small compass for the study of the current history of education in Germany. Of special value will such material be to members of normal schools and reading-circles, to whom, as well as to the general reader, the marginal topics will be of great convenience.

J. T. P.

January 1, 1892.

CONTENTS

CHAPTER PAGE

I. ORGANIZATION 1

Kinds of Schools. — Administration. — Supervision. — Qualifications of Teachers. — Appointment of Teachers. — Female Teachers. — School Buildings and Furnishings. — Courses of Studies. — Classification. — Terms and Sessions. — Recitation Periods and Recesses. — Statistics and Reports. — Examinations and Promotions. — Admission of Pupils. — The Sexes in High and Elementary Schools. — School Attendance.

II. MISCELLANEOUS NOTES 23

Text-Books. — Reference Books. — Apparatus. — Promotion of Teachers with Classes. — Salaries of Teachers. — Tenure of Office. — Pensions. — Teachers' Associations. — Outside Duties of Teacher. — Overcrowded Schools. — Home Study. — School Discipline. — Outside Discipline. — Visitors.

III. NORMAL SCHOOLS 35

Size. — Number of Teachers. — Class of Patrons. — Qualifications for Admission. — Course of Studies. — Normal Schools for Females. — State Aid. — Fitting Schools. Practice Schools.

IV. HIGH SCHOOLS 44

Gymnasien. — Realschulen. — Realgymnasien. — Progymnasien. — Realprogymnasien. — Oberrealschulen. — Höhere Bürgerschulen. — Höhere Mädchen Schulen. — Middle Schools. — Number of Pupils. — Recent Changes. — Latin and Greek. — Modern Languages. — Science. — School Circulars.

CHAPTER PAGE

V. PRIVATE, INDUSTRIAL, AND CONTINUATION SCHOOLS 59

Kinds of Private Schools. — Conditions of Maintenance. — Number of Private Schools. — Kindergärten. — Nurseries. — Trade Schools. — Manual Training Schools. — Leipsic School. — Continuation Schools. — Subjects of Instruction. — Times of Sessions. — Discipline. — Attendance. — Schools for Girls. — Schools in Berlin.

VI. ELEMENTARY SCHOOLS 68

Graded Schools. — Partially Graded Schools. — Ungraded Schools. — Course of Studies. — Tuition. — Sexes. — General Characteristics.

VII. OBSERVATION LESSONS AND ELEMENTARY SCIENCE 77

Plans for Early Object Lessons. — Plans for Lessons in Natural History. — Topical Outlines. — Objects Sought. — Relation to Other Studies. — Basis for Scientific Study. — Ethical Treatment of Subjects. — Expression of Thoughts. — The Hat. — Common Objects. — Lesson on Plants. — Lesson on Leaves and Blossoms. — Lesson on Birds. — Lesson on the Beaver. — Lesson on Angle Worm and Insects. — Lessons on Crab and Worm. — Observation, Experience, and Information. — The Surrounding Country. — Model Lesson on the Hazel-bush. — Physics. — Topics and Methods. — Illustrative Lesson in Physics.

VIII. READING 96

Reading-Books. — Reading-Frames. — Classification. — Methods of Teaching Beginners. — Illustrative Lessons. — Phonic Method. — Normal Word Method. — Word and Sentence Method. — Reading: Mechanical, Analytical, and Æsthetical. — Time Given to Reading. — Patriotism in the Reading-Class. — History in Connection with Reading. — Study of Literature. — Method of Awakening Thought and Interest. — From Expression to Thought. — Cultivation of Taste. — Fables and Fairy Tales.

CHAPTER PAGE

IX. LANGUAGE 114

Language in Every Recitation. — Text-Books and Blank-Books. — Syllabus of Work Prescribed. — Writing. — Use of Pen and Ink. — Blank Writing-Books. — Use of German Script. — Early Practice. — Dictation Exercises. — Spelling and Derivations. — Recitation from Memory. — Original Compositions. — Technical Grammar. — Illustrative Exercises.

X. GEOGRAPHY AND HISTORY 132

Course of Studies. — Books and Apparatus. — Use of Pictures. — Home Geography. — Plan Drawing. — Moulding. — Thorough Study of Germany. — Illustrative Lessons. — Cause and Effect. — Study of Foreign Countries. — Course in History. — Lecturing. — Patriotism. — Biography. — Memorizing of Dates. — Geography in Connection with History Pictures.

XI. ARITHMETIC 147

Course of Studies. — Text-Books and Apparatus. — Work of Each Year. — Illustrative Lessons in Primary Grades. — Middle Grades. — Higher Grades. — Short Processes. — Relative Measures. — Systematic Reviews. — Mental Work.

XII. MISCELLANEOUS SUBJECTS OF INSTRUCTION. 171

DRAWING. — MANUAL TRAINING: — Hand-work for Girls. — Hand-work for Boys. — SINGING: — Ends Sought. — Teachers. — Musical Instruments. — Singing by Note. — Part-Singing. — Singing in Higher Grades. — Soft and Low Tones. — Connection with other Studies. — PHYSICAL TRAINING. — RELIGIOUS INSTRUCTION.

XIII. THE HERBARTIAN SCHOOLS 183

Interest in Herbartian Philosophy. — End of Education. — Instruction Defined. — Kinds of Interest. — Subjects of Instruction. — Selection and Arrangement of Subjects. — Concentration. — Formal Steps of Instruction. — Illustrative Examples.

CHAPTER PAGE

XIV. REFORMS 205

Supervision. — Relations between Church and School. — Lessening of Local Powers. — Elementary Schools. — Teachers of High Schools. — Conference on School Reform. — Elementary School Reform. — School Terms and Vacations. — Changes in the German Language. — Near-sightedness. — Societies for the Reform of German Schools. — The New German School.

XV. AMERICAN AND GERMAN SCHOOLS . . . 216

Influence of Example. — Educational Systems of Germany, Austria, and Switzerland. — Influence of Educational Leaders. — Qualification of Teachers. — Normal School Course. — Needful Requirements for Teaching. — Permanence of Teaching Force. — Tenure of Teacher's Office. — Plan of Studies. — School Attendance. — Compulsory Laws. — School Supervision. — Influence of the Teacher. — Personality of the Teacher in the School-room. — Characteristics of Teachers. — Apparatus. — Museums. — Needed Changes in Subjects of Instruction. — Elements of Weakness in German Schools. — Condition and Prospects of American Schools.

SCHOOLS OF GERMANY

CHAPTER I

ORGANIZATION

THERE are in Germany both private and public schools. The private schools are established and supported by private individuals under a certain amount of governmental supervision, and are of all kinds and grades. The public schools are supported wholly or in part at public expense, and are controlled by the state or municipal government. They may be classified as follows: — Kinds of Schools.

1. Normal schools (*Lehrer-Seminare*) in which teachers for the elementary schools are trained.

2. High schools including (*a*) classical schools (*Gymnasien*) in which especial emphasis is placed upon Latin and Greek; (*b*) Non-classical schools (*Realschulen*) in which the sciences are chiefly taught; (*c*) Schools of various kinds in which the courses of studies of the *Gymnasien* or *Realschulen* are modified in some degree.

3. Elementary schools known under various names

and quite generally designated as people's schools (*Volkschulen*).

The organization and characteristics of these and other schools will be treated in subsequent chapters.

The chief power in the administration of educational affairs lies in the central government of each state. The details in the execution of this power differ somewhat in the various states; and yet, as would be expected, there is a quite general uniformity of practice in the main features of school administration throughout the empire. In the organization of school affairs Prussia has to some extent doubtless served as an example for other neighboring states. Especially at the time of and since the federation of the empire has the influence of the larger state been most powerful. To show therefore in small compass the most common characteristics of the administration of the schools in all of the states, the details of the administration of Prussian schools only need be given.

Administration.

In Prussia the highest power employed in directing school affairs is the Minister of Instruction[1] who is a member of the government. He has as representatives and advisers (all together being called the *Ministerium*) an under secretary and a number of councillors who constitute four distinct councils, one council having in charge church affairs, another medical affairs, a third

[1] The exact title of this official is *Minister der geistlichen, Unterrichts- und Medizinalangelegenheiten.*

matters relating to the universities, art and higher institutions of learning, and a fourth matters relating to normal schools and people's schools.

The Councillors having in charge educational affairs are skilled men, — one for universities; three, one of whom is a Catholic, for higher institutions; and three, one of whom is a Catholic, for normal and people's schools. Immediately under the *Ministerium* are the universities, technological schools, commissions for examining teachers of higher institutions, and other examination commissions, the normal gymnastic Institute, art academies, the great art collections, etc. Towards all other schools the state's relations are exercised through the provincial school boards[1] which have in charge the higher schools, and the district governments (*Regierungs-bezirke*), thirty-six in number, which have the people's schools and a greater part of the girls' high schools to look after. The district governments also have supervision of all private institutions, at least so far as to see that the provisions of their charters are complied with. The provincial school board has charge of all institutions, public and private, in Berlin.

Of the higher schools some are supported wholly by the general government, some by both general and local governments together, and some wholly by local governments and private persons or societies. Over all these institutions the provincial school boards have

[1] There are fourteen provinces in the kingdom.

supervision, either independently or in co-operation with others.

In addition to provincial and district administration, there is a local administration which has mainly to do with the external affairs of the schools, such as attending to repairs of buildings, fixing school fees, and, in certain cases, nominating teachers. For private and municipal schools the local school authorities nominate teachers, but confirmation is always left to the provincial or district authorities.

Supervision.

In the cities and in regularly laid out districts in the country there are school inspectors who are selected generally for distinguished service as teachers, upon whom devolve certain fixed responsibilities and duties. Saxony, for example, — a kingdom with about the same area and population as Massachusetts, — is divided outside of the larger cities into twenty-five districts. In each of these districts there is a superintendent, — or, as he is called, school-inspector, — who has to make periodical visits to the schools of his district. In these visits he is required to direct his attention especially (I quote from the laws[1] governing his duties) (1) to the observance of the law in relation to school attendance; (2) to the industry and demeanor of the teacher, and to the discipline, order, and cleanliness of the pupils; (3) to the adherence to the plan of study, to the methods of instruction, and to the progress of

[1] Das Volksschulwesen im Königreich Sachsen. — Leipzig, 1876 *A.* p. 30.

the pupils in general, and in each subject; (4) to the apparatus used, and the elaboration of the course of study; (5) to the scientific studies and additional employment of the teacher; (6) to the economical management of the school, particularly in respect to the prompt payment of the teacher's salary, and the maintenance of the school regulations; (7) to the occupations of the inhabitants of the place; (8) to the efficiency of the local school board. It is his duty to make an examination of the records of the local school board, and he has the right to cause the president to call a meeting of that board. He is obliged to visit the private schools, to see that the conditions of their establishment are complied with, and that they do not go beyond those conditions. He has to fill temporarily vacant places, and may give temporary leave of absence to teachers. He is obliged to call a meeting at least once a year, of all the teachers of his district, for the purpose of giving them directions. Finally, he must make a report yearly to the highest school board, giving the condition of the schools, and a statement of his work, together with statistics embracing every phase of education in his district. These and other regulations governing the official duties of the superintendent are definite and quite minute. In spite of the minuteness of his inquiry into the work of teachers, there seems to be little or no interference with the individuality of teachers, as will be shown later on. The inspector's visits to a given

school are sometimes a year or two apart; but the inspection, when it is made, is most thorough. I was permitted to read one of the inspector's reports made to a district board in Saxony; and the details respecting the condition of each school and the methods employed by each teacher were very minutely and carefully stated. In Prussia, in addition to duties just enumerated, the district school inspector has to pass judgment upon plans of school buildings and of alterations; to ascertain whether the local school inspector performs his prescribed duties; to attend to the supplying of school libraries with good books; to look after families of deceased teachers, and in general to stand between the government and lower school officers both in issuing government decrees and in reporting to the government what is done or what is omitted. It should be said in passing that not all the districts of Prussia are supervised by professional superintendents, or even by men whose entire time is given to the duties of their office.

In country districts there are local school inspectors, who visit the schools and have certain supervisory duties in the elementary schools. They are generally clergymen, who serve as supervisors without pay. Their duties are mainly advisory, relating to examinations, religious instruction, courses of study, substitute teachers, and matters of local interest. In some particulars their duties are connected with those of the district

inspector, who, on account of the size of his district, is not able to reach all the schools easily or frequently.

In addition to the supervision which is made by district and local school inspectors, there is constant oversight by principals of the work done in large schools. The number of recitations required to be heard by assistant teachers ranges from twenty-four to thirty-two a week, while the principal has, as a rule, to hear but twelve a week. The time not thus employed is given to making the required statistics, and to overseeing the work of his assistants.

Qualifications of Teachers.

All schools of every kind share the advantage of rigid state requirements for the qualifications of teachers. The tests are based chiefly upon examinations which are conducted by commissions consisting generally of representatives of the higher and local school boards, principals and teachers of schools, and specialists for drawing, gymnastics, etc. No teacher of any kind — not even a teacher in a private family — is permitted to teach unless he holds a certificate from an examination commission, or is permitted under its rules to teach temporarily.

In Prussia [1] an examination is given to the graduates of the normal schools at the close of their course to test their fitness to teach for a limited time in the elementary schools. Other persons than normal gradu-

[1] From Giebe's *Verordnungen*, p. 1–8. The Prussian plan of examinations is not unlike that of the other states.

ates may take this examination, but the nature of the examination prevents any considerable number from attempting it. As a matter of fact, there are very few teachers of elementary schools at present who are not graduates of the normal school course. The examination consists of three parts — a written, an oral, and a practical test. The written test, in addition to questions in arithmetic, geometry, geography, history, and natural history, consists of the composition of a choral and two essays, one upon some subject connected with religious instruction for which two hours are given, and one upon some other subject selected by the examining board for which four hours are given. Two translations from, and into Latin, French, or English are voluntary.

The practical test consists of a class-exercise with pupils, of which a written analysis is required, and for the preparation of which two days are allowed. The oral examination may be upon all subjects taught in the normal school course. Jewish candidates are not required to pass in religion. Clear and exact answers to all questions are required. If a candidate fails to pass in either religion, language, or arithmetic, or in any three of the other subjects, he does not receive a certificate. The certificate permits the holder to receive a temporary appointment as teacher of any elementary school.

Not earlier than two years and not later than five years after the first examination a second examination is given

to candidates who desire to receive a permanent appointment. This examination is given by the same board which gave the first examination, and consists of written, oral, and practical tests as before. Three written essays are required: one upon a subject connected with school management, one relating to religious instruction, and one relating to instruction in one of the other elementary school branches, — all to be written under the inspection of a member of the examining commission. The practical test is a class exercise as before, the subject of which is announced the day before. The oral examination is upon the history of education, principles of education, school management and methods of teaching the various subjects required to be taught. The work of the candidates in the several subjects is marked as before: "*very good*," "*good*," "*sufficient*," or "*not sufficient*." Candidates whose class exercise is marked, "*not sufficient*" are rejected. Results in other subjects are marked and counted as in the first examination. To those who successfully pass this examination, certificates are given entitling them to teach permanently and to receive a definite appointment.

Those candidates who at the first examination are marked "*good*" in religion, language, arithmetic, and the *real* studies (geography, history, and natural history), or instead of the *real* studies a foreign language, and who are marked "*good*" in all subjects given in the second examination, are entitled to teach in the lower classes

of the middle schools and of higher schools for girls.

Other and more severe examinations are given to candidates for the position of teacher in the middle and higher grades of middle schools and higher schools for girls, and also for the principalship of elementary schools.

Candidates[1] for the position of teacher in high schools (*Gymnasien*, *Realgymnasien*, *Oberrealschulen*, and *höheren Bürgerschulen*) are examined by "scientific examination commissions" consisting of seven members, one for each of the principal subjects in which the candidates are examined.

Candidates are required to have graduated from a gymnasium or *Realgymnasium*, and to have studied three years in a university. The examination is written and oral. Besides a brief biography written in Latin, or in French or English, candidates have two or three essays to write upon given subjects, being allowed six weeks' time for each essay. In certain cases the dissertation written to secure the doctor's degree in the university is received in lieu of the essays above mentioned. Severe oral and written tests are given in the subjects selected by the candidates as main subjects, while in other branches, notably philosophy, pedagogics, German language and literature, and religion, candidates are obliged to prove their effici-

[1] Information here given is taken from Sander's *Lexikon der Pädagogik*; Article: *Preussen*.

ency. Having received a certificate — conditional or unconditional — indicating his fitness for one or another position, the candidate is obliged to spend a certain period of time in a gymnasium or *Realgymnasium* under the direction of the principal before he can receive a permanent appointment. Formerly the time spent in practice was one year, being called a trial year (*Probejahr*). In 1882 the trial period was extended to two years, after which candidates pass another examination, in which they show that their time has been profitably spent in the observation and practice of good methods of teaching. In 1889 it was decreed that seven pedagogical seminaries should be established in every province, to be connected with the *Gymnasien.* A candidate for the position of teacher in a gymnasium is expected to spend a year in the seminary under the direction of a gymnasium director. During this trial year of teaching he is paid a small amount by the government.

There are examinations for teachers of abnormal children, — idiots, blind, deaf and dumb, etc.; also for teachers of special subjects, such as drawing, sewing, gymnastics, etc. These examinations are quite general in character and very thorough. In gymnastics, for example, the examination is oral and written, and covers various subjects, including anatomy, physiology, a description of apparatus and movements, and, for candidates who have not passed the regular teachers' examination, other subjects of elementary instruction.

It is not feasible, were it advisable, to give in detail here the various ways of making appointments in different parts of the empire. A few of the most noteworthy items only are given. Appointments are made by the government; i.e., by boards representing the government, but nominations for private and municipal schools are made by the local boards. These local boards in sending their nominations may state their preferences, but can send the names only of those who have passed the required examinations. In Prussia teachers are permitted to leave their schools only at the close of a term, and must give three months' notice of their intention to leave, unless excused by the school board from such notice.

Appointment of Teachers.

Certain appointments of elementary teachers are made for three years, and within that time the teachers so appointed are not permitted to resign. Other appointments are made for a longer or shorter time by the provincial or government boards.

The number of female teachers in Germany has gradually increased within a few years; yet in 1886 in the entire empire but little more than a tenth of all the teachers were females, largely employed in the lower grades of the elementary schools. Custom varies somewhat in the employment of married women as teachers. In some places no married women are appointed, and as soon as a female teacher marries

Female Teachers.

she must give up her position. In other places, as in Baden, married women may be employed as teachers whenever their family cares do not interfere with their work.

Most of the schoolhouses of Germany were built before the present generation. As a rule, therefore, they are poor, and the schoolrooms are small and poorly ventilated. Occasionally there is an arrangement of the windows by which fresh air is admitted without falling directly upon the pupils' heads; but generally, with the exception of a few new buildings, no means of carrying away the impure air is provided. The seats and desks are of the plainest kind, frequently being rude desks several feet long, with plain board seats — a pattern which existed in our country schools forty years ago.

School Buildings and Furnishings.

The blackboards are literally black *boards*, and the amount of surface in a room is very meagre compared with what is provided here. One blackboard, three or four feet wide and five or six feet long, is all that will be found in most schoolrooms. Occasionally two such boards will be found, sometimes with an arrangement for drawing up. Moistened sponges are quite generally used for cleaning the boards; thus there is avoided the dust so common in our schoolrooms.

As a rule, the walls of the schoolrooms are unadorned with pictures, save one or two portraits. The portrait of Luther everywhere abounds both in the schoolrooms

and in the homes of protestant Germany. In many schoolrooms also there is a portrait of the Emperor. The latter is required by law in Prussia.

Courses of Studies.

A general plan of studies is issued by the minister of instruction or corresponding head of educational affairs in each state of Germany; and this general plan is elaborated by masters of schools, subject to the approval of the district school-inspectors. The general plans issued by the government specify the subjects of instruction and the time to be given to each subject. They also give general directions as to methods of teaching.

More will be said in subsequent chapters of the courses of studies for the various schools.

Classification.

The graded schools of cities and large towns are classified not unlike similar schools in this country; i.e., there is a separate class with one teacher in every room. I saw no large schoolrooms with small recitation rooms adjoining, as are sometimes seen here. In some places there is an approach to the departmental plan of teaching: a teacher, for example, who is especially successful in teaching natural science gives a portion of his time to that subject in several rooms of the building, still keeping general charge of his own room. This practice is more common and is carried farther in the higher than in the lower schools.

The schools are in session from forty-two to forty-five

weeks in the year, separated into four terms of from nine to twelve weeks each. The vacations are from one to four weeks in length, generally occurring at Easter, midsummer, Whitsuntide, and Christmas.[1] Terms and Sessions.

In the schools of cities and larger villages there is a single grade in a room, and the pupils of each grade, except the lowest, are generally reciting every hour of the day. Six hours a day are thus given, — four hours in the morning and two in the afternoon, with an intermission from five to fifteen minutes between recitations. The hours for school sessions are in summer from seven to eleven o'clock A.M. ; in winter, from eight o'clock A.M. to twelve M. ; and in all parts of the year, from two to four o'clock P.M. The sessions of the lower grades are shortened somewhat, the morning session sometimes being but two or three hours in length. In some places the higher schools, and in Berlin all schools, have but one session of five or six hours in the day.[2] In Berlin the school day for pupils of the lower grades is but four hours long.

There are in most schools where two sessions are held four recitation periods in the forenoon and two in the

[1] The school year generally begins after the Easter vacation. In Bavaria by recent ministerial decree the *Realgymnasien* school year begins September 10 and ends July 14.

[2] In many parts of Germany local inspectors and principals are authorized to dismiss pupils at noon for the day whenever at eleven o'clock A.M. the thermometer registers 22° *Réaumur* (about 81½° Fahrenheit.)

afternoon. Between the periods there is a recess of a few minutes, giving an average of about fifty minutes to each recitation. This is generally the arrangement in graded schools of all grades. In the lowest grades there is frequently given some variety of work during a period, and sometimes pupils of such grades recite in sections or groups of a dozen or more.

Recitation Periods and Recesses.

In ungraded schools the same general plan of long recitation periods prevails, but the period in some subjects is broken by the adaptation of work to pupils of different ages or capacities.

Attached to all schools are playgrounds where children stay during recesses and before school under the care of at least one teacher. Sometimes the children spend an entire recess in marching under the guidance of a teacher. In many schools, I saw older pupils acting as monitors during the recesses and while the classes were filing to and from the playground. They seemed, in some instances, to have authority to command, and even to punish by boxing the children's ears. This, however, may have been a self-assumed prerogative.

The ordinary teacher needs to spend but little time upon statistics of any kind. I saw no signs of marking the attainment of pupils by percentages, or of elaborate monthly reports, or of the dozen other things which vex the life of some American teachers. There are quite extended statistics con-

Statistics and Reports.

cerning the parentage, birthplace, religion, etc., of all pupils, but they are made out, kept, and reported by the principals and not by assistant teachers.

Books for recording absence and tardiness of pupils are kept by all teachers. In some schools I noticed the following plan for marking absence and tardiness: if a pupil is not present at the beginning of the session, a dot is placed against his name; if he does not appear during the session, the dot is prolonged into a vertical line; and if no good excuse for the absence is given, the line is crossed.

All teachers keep another book in which is placed a record of what is taught each day in every subject; this record is brief and always, so far as I saw, was made by subjects. Thus at the end of the term or year may be seen a complete record of what is done by each class.

In many schools, and perhaps in all, reports indicating in a general way the standing of pupils in each subject of study are sent to parents. These reports are sent not oftener than twice a term, and are marked by figures or letters which show that the pupil is either *very poor*, *poor*, *fair*, or *excellent* in any given subject. Teachers of ungraded schools and principals of graded schools in Prussia are obliged by law to keep a history of the district in which the school is situated.

Examinations may be said to have a different place in

the schools of Germany from what they have in our schools. The public examinations which occur at the close of the school year may be attended by the public, but, consisting as they do largely of rhetorical exercises and singing, they show little of the real work of the school.

Examinations and Promotions.

Class examinations, which in the higher schools occur once or twice a year, are oral and are attended by members of the school board and teachers of the school. The examination of each class is conducted by the teacher in charge, but the principal of the school and other visitors are expected to ask questions. If one of these examinations which I attended is a fair sample, they are most thorough and searching.

Great emphasis is laid upon the "leaving examinations" which occur at the close of the courses in higher schools. These examinations are generally very difficult and comprehensive. In the gymnasium and *Realschule* they determine the student's fitness for the university and technological school. The graduation examinations in the normal school are oral and written, and must be passed before permission is given to teach.[1]

There are occasional written tests in the high schools, and they no doubt assist in determining the pupils' ability to go into a higher grade. Apart from these I could discover no "examinations for promotion,"

[1] For particulars concerning these and other examinations, see pages 7–11.

so common with us. Promotions are in the hands of the principal, who is guided in his judgment by the teacher's opinion of the pupils' merits. In the common schools, failure to pass into a higher grade seems to be much more infrequent than with us. Seldom is a boy or girl found who has not made the required preparation for confirmation at the end of the eighth year in school, the time allowed for the completion of the course. One is struck with the uniformity of age of pupils in the various grades, rarely a year apart instead of two or three years as with us. Children enter school at six years of age and leave at fourteen, rarely at fifteen.

One cause of regularity in promotions may be the enforced attendance of all pupils during the entire school year.

Admission of Pupils.

The age at which children are obliged to begin attendance at school in most states is six years, and the time of admission is generally the beginning of the term after the Easter vacation.

The Sexes in High and Elementary Schools.

By reference to the chapter on high schools it will be seen that girls and young women do not have the advantages of education that boys and young men have. There are seven kinds of public high schools for boys and only one for girls. In Prussia there were, in 1886, 1,271 public high schools for boys, and only 185 schools of the same kind for girls. In the courses of studies it will be seen that girls are not permitted to study Latin, Greek, or higher mathe-

matics in the public school, and that but little provision is made for the study of science.

The above figures apply to public schools only. There are a few private girls' schools in which the study of Latin and Greek is permitted.

Young women are not allowed to matriculate as students in the universities, nor, except in a very few of them and this by permission of the professors, are they permitted to attend the lectures. This privilege is granted in the Leipsic university, but it is accepted only by a few young women and those largely Americans.

In the graded elementary schools the girls are taught generally in separate classes, except in some of the lower classes where the boys and girls are together. In ungraded schools the boys and girls are generally taught together.

School attendance is compulsory for all children between the ages of five or six and fourteen, or until certain studies are completed. The time for such attendance is the entire time in which the schools are in session, and no one is excused from attendance except children of unsound bodies or minds, and children whose parents or guardians give them at home the same education which they would receive in school.

School Attendance.

The school authorities and the police work together in enforcing the laws. Lists of children of school age

are in the hands of the school authorities and police. In Prussia a list of absentees, with cause of absence, is sent to the police board at stated times.

Although truants are wrought upon in all possible ways, even to being sent to a reform or truant school, the parents or guardians are generally held accountable for their children's absence from school, and are punished with a fine or imprisonment for a violation of the law. In Prussia a parent or guardian is fined from ten *Pfennigs* (two and one-half cents) to a *Mark* (twenty-five cents) for each day of his child's unexcused absence from school; and, in case the fine is not paid immediately, the parent may be imprisoned from three hours to one day. Instead of imprisonment the person fined may work the same length of time for the benefit of the Commune. Employers allowing children to work during school hours are fined from one to one hundred and fifty *Marks*, or imprisoned not exceeding fifteen days.

The following facts[1] show the thoroughness with which the compulsory laws of Prussia are enforced.

Statistics of School Attendance, Dec. 1, 1885.

Whole number of children obliged to attend school	5,333,456
Number in attendance upon public schools . .	4,838,247
Number in attendance upon private and other schools	299,280
Number of children not yet in the school, or of children who have left — all for good reasons . .	170,439

[1] Preus. Stat. 101, p. 10.

Number not in attendance on account of some physical or mental defect	13,519
Number not in attendance for want of room	8,826
Number absent unexcused	3,145

Of the above number reported in attendance upon the public schools, 131,947 were obliged to go a distance of more than theee kilometres, or one and seven-eighths miles.

CHAPTER II

MISCELLANEOUS NOTES

FEWER books for study are used by pupils of the elementary schools of Germany than with us, they being, for the most part, outlines, and containing only the most essential facts. Much of what is found in our text-books is there supplied by the teacher. In some of the elementary schools, only one book is used for geography, history, and natural science. One book of this character I found divided as follows: for geography, 91 pages; history, 126 pages; natural history, 101 pages; physics and chemistry, 78 pages. The book was designed to be used during the last five years of the course.

Text-books.

The conciseness of the text-books and the fewness of them may be comprehended from the fact that most, if not all, pupils carry their books and all their school belongings to and from school every day. These are generally placed in bags or knapsacks strapped to the backs of the children.

In the selection of books there seems to be a somewhat different policy in the various sections. In Bavaria the selection depends upon the local inspection board,

and in Saxony upon the *Miniserium*, or highest school board. In Prussia the selection of books for the elementary schools is determined by the concurrent vote of the local and district boards ; the minister of instruction reserves the right of selection, except in important reading-books, and in books for religious instruction, which must have the indorsement of certain church authorities. For the introduction of any new text-book in a high school, permission is granted by the provincial school board, after a recommendation of the book by the principal and his associate teachers. The recommendation must be accompanied by a statement of reasons. New introductions of books must be made at the beginning of the school year.[1]

Pupils are expected to furnish their own text-books if able to do so. If not, the government provides them.

Reference Books.

If the comparatively small number of text-books for pupils is noticeable to the American visitor of German schools, the multiplicity of reference books for teachers is no less so. Many schools are well supplied with books for the use of teachers, upon methods of teaching the various subjects, as well as upon the subject matter to be taught. Where the schools themselves do not furnish such books, there is within easy reach of teachers a reference library, the books of which are supplied at little or no cost to the taker.

[1] Sander's *Lexikon der Pädagokik ;* Article: *Lehrbücher.*

As a consequence of the liberality of the general government, and of the professional zeal of teachers, all schools of Germany are well supplied with suitable apparatus for teaching. In most school-buildings there is a room given up wholly to the storing of apparatus, which consists of natural objects, charts, pictures, and mechanical contrivances, some of them bought outright, and some made by the teachers and pupils of the school.

Apparatus.

The government furnishes a special appropriation for apparatus when a school is established, and a stated sum yearly for the same purpose afterwards. In some country schools, in addition to what is furnished by the government, the communities where the schools are located and local societies furnish what is needed.

In the elementary schools of Prussia the following appliances are, by law, required to be provided : —

A copy of every text-book used in school ; a globe ; a wall map of the home province ; a wall map of Germany ; a wall map of Palestine ; charts for instruction in natural history and philosophy ; large alphabets of wood or of pasteboard ; a violin ; a rule and a pair of compasses ; a numeral frame ; bodies for teaching geometry ; two blackboards ; for Protestant schools, a Bible and a copy of the song-book used in the district.

That the provision made by local boards and communities far exceeds the statute requirements, is evident to all who have visited the apparatus-rooms con-

nected with the various schools. Hundreds of objects and charts are stored there ready for use in teaching the various subjects. In one elementary school of Prussia I counted among the apparatus for teaching physics and chemistry alone seventy-seven different articles.

Promotion of Teachers with Classes.

To prevent a too frequent change of teachers, there is the custom in some graded schools of having the teachers move along from class to class with their pupils. The same end is reached, to some extent, by having teachers of special subjects take the same class for two or more years in succession.

Salaries of Teachers.

To Americans the salaries paid to teachers of Germany seem ridiculously small. The highest salaries, I think, are paid in Berlin, where the principals of the *Gymnasien* receive about $1,650[1] a year, with free rent of dwelling. Other teachers of high schools in Berlin receive on the average $900 a year. In other parts of Prussia the average salary of high school teachers is a little less than $800 a year. From $60 to $225 a year is allowed to teachers of the upper classes for rent. The average yearly salary of all elementary school teachers of Prussia, in 1886, counting what is allowed some teachers for a dwelling, was $318.75. The average of salaries in the cities is

[1] All figures here in U. S. money are based upon the rate of four *Marks* to the dollar. The facts are taken from Sander's *Lexikon der Pädagogik.*

higher than in the country, where from the schools alone teachers receive only an average of $281 a year; but teachers in the country frequently receive extra compensation for their service as choir masters and organists, and by special gifts from societies and local communities.

Salaries in Saxony are somewhat higher than in other parts of Germany. Principals of the *Gymnasien* and *Realgymnasien* receive $1,500 and a free dwelling. Principals of other high schools and normal schools receive from $1,200 to $1,350 and a free dwelling. Head teachers (*Oberlehrer*) and other assistants of high schools receive from $450 to $1,350. Teachers of elementary schools receive from $210 to $900, and principals $1,200.

In estimating the relative value of these salaries some circumstances should be taken into account. In the first place, the cost of living is much less in Germany than in America. Again, in case of disability, teachers receive a pension from the government, and their families receive assistance after their death. Teachers are excused from paying taxes, and they have but ten weeks' military service, instead of a service of one year or three years, as is required of other able-bodied male citizens.

One reason why the teachers are contented with the salaries that are paid them is, that when once appointed, they hold their office practically during life,

or good behavior. Rarely is a teacher dismissed from service, and then only after repeated complaints by the superintendent and principal. People have said that if teachers were given a life tenure, they would greatly neglect their work, having lost one great incentive to do well. But I can testify, from wide observation, that such is not the case in Germany. I remember only two teachers who seemed to deserve suspension from duty, and one of them was quite aged.

Tenure of Office.

Various percentages of the salaries of teachers are allowed as pensions upon the retirement or death of teachers, these depending upon the time and place of service. The pension of teachers in Prussia after ten years' service amounts to one-fourth of the salary of the last year of service, and is gradually raised, until, after forty years of service, the pension amounts to three-fourths of the last year's salary.

Pensions.

In other parts of Germany the minimum time of service before pensions are granted is much less. In some of the smaller states pensions may be granted immediately after permanent appointment: in Bavaria after four years, and in Baden after five years. The amount of pension in places other than Prussia ranges from thirty-three and one-third per cent to one hundred per cent of the last year's salary.

The wife and children of a deceased teacher receive

a certain percentage of the teacher's pension, ranging from $40 to $400 a year.

In some states the teachers are obliged annually to subscribe to the pension fund a certain percentage of their salaries. Prussia, in 1888, and Saxony, in 1890, released the teachers from this obligation. The payment of pensions in Prussia is assumed by the state and separate municipalities. The state paid in 1886 about one-half of the entire amount of pensions paid.

Teachers' Associations.

As a means of keeping up a high professional standard among teachers, and of exercising a strong influence upon public opinion and legislation in relation to education, there are maintained throughout the empire a great number of associations of teachers. These exist in great variety, representing all kinds and grades of teachers, from the little organized circle of village teachers to the National Union, now numbering nearly 40,000 members. It is estimated that there are now upwards of 60,000 active paying members of the various associations.

From observation, and from an examination of a recent Year Book of German associations, — a book of two hundred pages, containing subjects of discussion and objects and names of organizations, — I judge that the advantages of associations in Germany over our own lie chiefly (1) in a better organization, whereby the work of small branch associations is made effective, and

more definite conclusions are reached; (2) in concentrating the discussions upon points of vital interest.

In many of the associations there are schemes for assisting members in case of sickness, and for pensioning families of deceased members.

Outside Duties of Teacher.

In addition to regular duties of the school, the teacher, especially in the country, is frequently employed as chorister and organist for the church, and, in many places, also as sexton. These duties bring him into close relation with the people, and the compensation therefor serves to eke out the small salary he receives as teacher. At the same time, the practice is attended with certain dangers from clerical or church influence, to which the attention of reformers is just now being directed.

Other duties, notably those of teacher of a continuation school (evenings and Sundays), fill the *spare* time of these much overworked officials. It should be said that in Prussia permission to engage in outside duties must be had from the government.

Overcrowded Schools.

Although the number of pupils to a teacher is limited by law in most parts of Germany, yet the complaint is constant and universal that the schools, especially the elementary schools, are overcrowded. That there is good ground for complaint, in Prussia at least, is shown from the fact that in fifty-one places situated in nine government districts, the average number of pupils to a teacher in 1886 was over

one hundred — in some cases being as high as one hundred and twenty.[1]

Overcrowded classes are not so general in the high schools as in the elementary schools, and yet in the lower classes of these schools, although the number of pupils is limited by law to thirty and forty, there are sometimes found as many as fifty or sixty pupils.

In some parts of Germany the time given to home study for pupils of the elementary schools is limited by law or decree as follows: For pupils of the lower grades, one hour; of the middle grades, one hour and one half; of the upper grades, two hours.

Home Study.

No limit, so far as I could learn, was made anywhere to the amount of time devoted to study outside of school hours by pupils of the high schools. The present emperor, in a speech before a recent conference for school reform, declared that the time given for home study by pupils of class *prima* of the Gymnasium was from five and one-half to seven hours a day. This is probably an extravagant statement. It is safe to say, however, that pupils of all grades in Germany study more out of school than do pupils of the same grade and age in this country, — a conclusion which I reached after much inquiry of parents, teachers, and children. This disparity may be due in part to the fact that no time is allowed for study in school, every portion of the school day being given to recitations.

[1] Preus. Stat. p. 55.

It should be borne in mind that much of what our children get from books by "study" is acquired directly from teachers in Germany, and therefore that the nature of home study must be essentially different in the two countries. I noticed in several instances that the work required to be done at home was of a kind that did not permit harmful assistance: such as copying corrected language exercises, memorizing dates and pieces for recitation, and solving and writing out problems that do not require much reasoning.

School Discipline.

While whipping in many places is practised to a limited extent, and each case is reported to the authorities, there are some forms of corporal punishment which I think are not reported, and, so far as I could judge, are not much limited in their application. I refer to ear-cuffing, hair-pulling, shaking, etc. The use of sarcasm and the calling of names by the teacher are quite general means of correction for the most trivial mistakes in recitation. Failure to answer a question, a careless slip of the tongue, a mispronounced or misspelt word, often brings down upon the offending pupil such anathemas as to make the visitor wonder what would happen if something really worthy of censure should occur. One or more teachers are delegated to oversee the children during recesses, of which there are several in the day. Sometimes the entire recess of five or ten minutes is occupied in marching up and down the school playground.

Rigid home training, and the military spirit which prevails throughout the country, probably account for the greater severity of discipline in the schools of Germany as compared with that in our own schools.

Pupils of all ages seem to be subject to the control of school authorities to a far greater extent than with us. Pupils of high schools in Prussia are forbidden to absent themselves from the city or town over night, to attend theatres and balls, or receive private lessons, without permission from the teacher or director. They are forbidden to frequent saloons and taverns, and may not attend certain public performances, except in company with their parents or guardians. Alcoholic liquor or beer cannot be sold to children of school age.

Outside Discipline.

In many parts of Germany no one, not even a parent or friend of the pupils, is allowed to visit the school at any time, without permission from the constituted authorities. To visit the high schools one must get written permission from the minister of instruction or provincial school board. To visit the elementary schools permission from the city or district superintendent must be obtained. In Southern Germany there does not seem to be so great strictness in requiring letters of permission as in the northern part. In Saxony and other parts of Southern Germany, the principal of each school seems to be authorized to permit persons to visit the rooms, although even then

Visitors.

an *official* letter of permission and introduction goes a great way toward securing favors which would not otherwise be given.

Special provision is made in some states for teachers of normal schools to visit schools other than their own.

CHAPTER III

NORMAL SCHOOLS

THERE are in the entire empire about two hundred normal schools, more than half of which are in Prussia. Most of these institutions are supported by the state, some by cities, and some by private individuals. The schools for males and the schools for females are separate; a division more or less marked is made also on the basis of religion. For example, in Prussia seventy-two schools are reported as Evangelical, thirty-seven Catholic, and five as placing religious beliefs on an equality (*parität*).

As a rule, these schools are not large, numbering in most cases not more than one hundred pupils. The classes are correspondingly small, each class having rarely more than forty pupils. In 1888, there were but five of the one hundred and fifteen normal schools of Prussia which had upwards of one hundred pupils, and but one which had less than fifty pupils. Size.

The number of teachers required for each normal school in Prussia is seven: one principal, one head assistant, and five other assistant teachers. In the

year 1888 the average number of pupils to a teacher was about twelve. The number of teachers above cited does not include the critic teachers, of whom there are two or more in every practice school.

Number of Teachers.

The students who enter the public normal schools are generally from the middle classes: merchants, teachers, etc. Of the 958 students who attended the Berlin Normal School for males between the years 1830 and 1850, 420 were sons of merchants; 245 of teachers; 114 of lower officials; 57 of farmers; 38 of workmen; 27 of military men; 16 of clergymen; 11 of men who live upon their rents; 8 of physicians and lawyers; and 22 of all other occupations.

Class of Patrons.

The qualifications for admission to the normal schools are considerably in advance of the qualifications required for similar schools in America. In another respect the German normal schools have an advantage over ours, and that is in respect to the preparation which the pupils receive in the lower schools. The instruction there in all branches is uniformly good, and but little time is required to train pupils into good habits of study. In the sciences the observation work of the lower schools is particularly helpful to normal-school students, both for the training it gives them, and for the facts which are acquired as a basis for scientific work.

Qualifications for Admission.

The examination for admission to the normal school

is oral and written, embracing all subjects required to be taught in the elementary schools. The written work includes a theme upon a given subject and brief tests in the various studies. The oral examination is conducted by members of the faculty, each teacher generally examining in the subject which he teaches. From the prescribed requirements, I quote a few of the principal features.

In Prussia candidates for entrance to a normal school for males may not be under seventeen years of age, and not more than twenty-four. They must present certificates as to their physical condition and moral character, and must present a satisfactory guarantee that the father or guardian is able to pay their living expenses during the course. They pledge themselves to serve as teachers in the kingdom at least three years, under penalty of forfeiting the cost of instruction and board. The syllabus of entrance requirements shows that no time of the normal-school course is expected to be given to teaching the subject matter of the elementary schools; or, if such matter is taught, it is mainly for discipline, and for the purpose of enabling the students to know the subjects from the teacher's standpoint.

In language, candidates must know the principal forms of poetry, and must be able to repeat from memory and explain poems of celebrated authors. They must be able to give practical applications of

grammatical rules, and write correctly short themes on given subjects.

Arithmetic, geography, elementary algebra, and the elements of plane geometry are expected to be thoroughly known.

Course of Studies.

The course of studies for the normal school proper extends over three years. In Saxony the course is six years; but the first three years are given to preparatory studies. These institutions are supposed to take students directly from the elementary peoples' schools. Other normal schools draw directly from the higher common school (*höhere Bürgherschule*), or from the higher girls' school. Some of these schools have a two years' preparatory course, beginning where the elementary course is supposed to end.

The following tables indicate the distribution of studies in the two kinds of schools mentioned: —

Royal Prussian Schools, Three-Years' Course.

Subjects.	Number of Recitations Weekly.		
	First Year.	Second Year.	Third Year.
Pedagogics	2	2	3
Religion	4	4	2
German	5	5	2
History	2	2	2
Arithmetic	3	3	1
Geometry	2	2	–
Physics	4	4	2
Geography	2	2	1
Drawing	2	2	1
Writing	2	1	–
Gymnastics	2	2	2
Music, instrumental and vocal	5	5	3
Foreign language (elective)	3	3	2

Six-Years' Course in Saxony, designed for Pupils who have graduated from the Elementary People's Schools.

Subjects.	Number of Recitations Weekly.					
	First Year.	Second Year.	Third Year.	Fourth Year.	Fifth Year.	Sixth Year.
Religion	4	4	4	4	4	3
German	3	3	3	3	4	3
Latin	7	7	5	4	2	2
Geography	2	2	2	2	2	–
History	2	2	2	2	2	2
Nature studies	2	2	3	–	–	–
Physics	–	–	–	3	2	2
Mathematics	4	4	5	4	4	3
Pedagogics	–	–	–	4	5	5
School practice	–	–	–	–	4	4
Music, vocal and instrumental	5	4	4	4	–	–
Gymnastics	3	3	3	3	2	2
Writing	2	2	1	1	–	–
Drawing	2	2	2	2	1	1

Stenography and piano and organ lessons, elective.

It will be seen from these plans that much more is required in some branches than our schools require, especially in those branches which are frequently taught in this country by special teachers. In music, for example, every student of the normal school is required to learn to play upon some musical instrument, generally, in men's schools, upon the violin. Regular instruction, with several hours of practice weekly throughout the course, gives the students such facility in playing the violin or piano as to enable them to teach music well when they become teachers.

In 1890 only twenty-three of the two hundred state normal schools were for females. The requirements for admission to these schools are not unlike the requirements for other normal schools.[1] In Prussia less music is required in the entrance examination for female schools than is required

Normal Schools for Females.

[1] See pp. 36, 37.

for male schools, and hand work — sewing, etc.,— is an added subject of examination.

The plan of study for these schools is somewhat different from the schools for males, as the following table shows:—

Plan of Study in State Normal School for Females, Dresden, 1882 -83.

Subjects.	Number of recitations weekly.									
	First year.		Second year.		Third year.		Fourth year.		Fifth year.	
	Req.	Elec.	Req.	Elec.	Req.	Elec.	Req.	Elec.	Req.	Elec.
Religion	3	–	3	–	2	–	2	–	2	–
German } Language	4	–	4	–	3	–	3	–	3	–
French } Language	4	–	4	–	4	–	4	1	4	1
English } Language	–	3	–	3	–	3	–	4	–	4
Geography	2	–	2	–	2	–	1	–	1	–
History	2	–	2	–	2	–	2	–	1	–
Natural Science	3	–	3	–	3	–	2	–	1	–
Arithmetic and Geometry	3	–	3	–	2	–	2	–	1	–
Pedagogics	–	–	–	–	4	–	4	–	4	–
School practice	–	–	–	–	–	–	3	–	3	–
Singing	2	–	2	–	2	–	2	–	2	–
Harmony and Piano	–	1	–	1	–	2	–	2	–	2
Drawing	2	–	2	–	2	–	2	–	2	–
Writing	1	–	1	–	1	–	–	–	–	–
Sewing, etc.	2	–	2	–	2	–	2	–	2	–
Gymnastics	2	–	2	–	2	–	2	–	2	–
Stenography	–	2	–	2	–	–	–	–	–	–
Total,	30	6	30	6	31	5	31	7	28	7

As a rule, fewer changes in classes occur during the course than in our schools, either by accessions, departures, or non-promotions. The following tables show how well the numbers are sustained in three classes of a small normal school in Eisenach. It should be said that this instance of regularity is by no means an exceptional one.

School Year, 1886–87.

Class.	Number left at Easter.	Number entered at Easter.	Number of Pupils at beginning of School Year.	Deaths during the School Year.	Number left during the School Year.	Number entered during the School Year.	Number of Pupils at end of School Year.
I. .	21	–	20	—	1	—	19
II. .	–	1	14	—	–	—	14
III. .	1	10	11	—	–	—	11
Total .	22	11	45	—	1	—	44

School Year, 1887–88.

Class.	Number left at Easter.	Number entered at Easter.	Number of Pupils at beginning of School Year.	Deaths during the School Year.	Number left during the School Year.	Number entered during the School Year.	Number of Pupils at end of School Year.
I. .	18	–	13	–	–	—	13
II. .	–	1	14	1	–	—	13
III. .	1	12	12	–	1	—	11
Total .	19	13	39	1	1	—	37

Tuition is free to all students who intend to teach. In boarding schools the expense of living is very small — in many cases less than eighty dollars a year. Assistance is given by the government to indigent pupils, amounting in some cases to the entire cost of living. In some of the buildings which I visited there were large sleeping-rooms having thirty or more beds. This arrangement, with the exceedingly simple bills of fare, brings the living expenses of the students down to the lowest possible amount. **Expense.**

In some parts of Germany, where preparation for entrance to the normal schools is not easily made in existing institutions, there are special fitting schools established either by private individuals or by the gov-

ernment. In Prussia there are thirty-two government fitting schools, the course of which covers three years of study. Candidates for these schools are admitted by examination, oral and written, upon the studies of the elementary schools.

Fitting Schools.

Some of the normal schools have connected with them two practice schools for observation and practice — one ungraded and another graded into four or more classes. All the graded practice schools in Prussia follow the course of the people's elementary schools with the exception of the school connected with the Berlin Normal School for males, which has a nine-years' course, embracing elementary and high school studies.

Practice Schools.

In some schools the amount of observation and practice is much greater than that indicated in the above table. In Prussia students of the normal school observe and assist in the practice school several hours a week during the second year of the course. During the third year of the course students have not less than six hours and not more than ten hours a week of actual practice in teaching and disciplining a school. In the Eisenach Normal School members of the senior class spend eighteen and a half hours a week in the practice school, eight hours of which is spent in teaching.

In all the public normal schools which I visited the work required of the pupil teachers was very systematic and severe. The student has first to submit to

a critic teacher for correction an abstract of the recitation which he is about to conduct. The recitation is then subject to the criticism of a critic teacher who has, besides his regular work in the practice school, a few special subjects to teach in the normal school. The programmes of the senior class are so arranged as to permit members to observe and practise during the practice school hours. Thus regular recitations for the senior and junior classes are likely to begin as early as seven A.M., and to continue as late as seven P.M.

Sometimes the critic teacher and the entire senior class observe the work of a pupil teacher in teaching, and for a longer or shorter time after the lesson there is a discussion of the merits of the method and management. These discussions are free, and the criticisms, as a rule, are very severe. In the seminary connected with the University of Jena, one evening a week is devoted to these discussions which are always of a very searching nature, neither professor nor students showing any mercy in their criticisms of mistakes.

CHAPTER IV

HIGH SCHOOLS

THE high schools are designated by different names, depending in part upon the length of the course and in part upon the studies pursued. The names and general characteristics of these schools are as follows:—

1. *Gymnasien*, or schools in which special emphasis is placed upon the study of ancient languages, corresponding to the Latin schools of some of our larger cities. The following programme [1] indicates the amount of time spent upon the various subjects in a royal Prussian gymnasium following three years in a primary preparatory school.

SUBJECTS.	NUMBER OF RECITATIONS WEEKLY.									
	First Year.	Second Year.	Third Year.	Fourth Year.	Fifth Year.	Sixth Year.	Seventh Year.	Eighth Year.	Ninth Year.	Total.
Religion	3	2	2	2	2	2	2	2	2	19
German	3	2	2	2	2	2	2	3	3	21
Latin	9	9	9	9	9	8	8	8	8	77
Greek	–	–	–	7	7	7	7	6	6	40
French	–	4	5	2	2	2	2	2	2	21
History and geography	3	3	4	3	3	3	3	3	3	28
Mathematics	4	4	4	3	3	4	4	4	4	34
Natural history	2	2	2	2	2	–	–	–	–	10
Physics	–	–	–	–	–	2	2	2	2	8
Writing	2	2	–	–	–	–	–	–	–	4
Drawing	2	2	2	–	–	–	–	–	–	6
Gymnastics	2	2	2	2	2	2	2	2	2	18
Singing	2	2	2	2	2	2	2	2	2	18
Total	32	34	34	34	34	34	34	34	34	

Hebrew and, in some schools, English are elective both for four years of the course.

[1] Adopted in 1882.

The *Gymnasien* have generally six classes, covering a course of nine years, each of the three highest classes being separated into two divisions. The course is begun when the pupil is about nine years of age.

In Saxony the requirements are greater in some subjects than are indicated in the above table, as is shown by the following: —

Programme of Studies [1] *for Gymnasium in the Kingdom of Saxony.*
(*Figures in parentheses denote elective work.*)

SUBJECTS.	NUMBER OF RECITATIONS WEEKLY.									
	First Year.	Second Year.	Third Year.	Fourth Year.	Fifth Year.	Sixth Year.	Seventh Year.	Eighth Year.	Ninth Year.	Total.
Religion	3	3	3	2	2	2	2	2	2	21
German	3	3	3	2	2	2	2	3	3	
Latin	10	10	10	10	10	10	10	9	9	
Greek	–	–	6	6	6	6	6	6	6	
French	–	2 (3)	2	2	2	2	2	2	2	
Hebrew	–	–	–	–	–	–	(2)	(2)	(2)	
English	–	–	–	–	–	(2)	(2)	(2)	(2)	
Mathematics } Numbers — Arithmetic }	3	3	3	4	4	4	4	4	4	
Natural History and Physics	2	2	–	2	2	2	2	2	2	
History } Geography }	4	4	4	4	4	3	3	3	3	
Philosophy	–	–	–	–	–	–	–	(1)	(1)	
Penmanship	2	2	–	–	–	–	–	–	–	
Drawing	2	2	2	2	2	2	2	2	2	
Singing	2	2	2	1	1	1	1	1	1	
Gymnastics	2	2	2	2	2	2	2	2	2	
Stenography	–	–	–	(1)	(1)	(1)	–	–	–	

[1] Adopted, 1870.

Graduation from this course entitles the student to enter the university, and those who pass the examination for the seventh year class (*obersecunda*) are entitled to enter the voluntary one-year service in the army.

2. *Realschulen,* or schools in which mathematics,

science, geography, and history are chiefly taught. These schools by the name here given are comparatively few. Only about one-eighth of all the high schools of Germany are known as *Realschulen.* In some places, as in Bavaria and Saxony, they are in all respects like the Higher Burger schools of other parts of Germany.

In Prussia the *Realschulen,* called second grade *Realschulen,* are the same as the *Oberrealschulen* without the last year of the course. A graduate of these schools is entitled to the one-year voluntary service in the army.

3. *Realgymnasien.* — These are schools having a nine-years' course in which mathematics, natural science, modern languages, and Latin have a prominent place. The following programme of a Prussian *Realgymnasium* shows the kind and amount of work done. As in the course of the gymnasium above given, this course is supposed to follow a three-year preparatory course.

Subjects.	Number of Lessons Weekly.									
	First Year.	Second Year.	Third Year.	Fourth Year.	Fifth Year.	Sixth Year.	Seventh Year.	Eighth Year.	Ninth Year.	Total.
Religion	3	2	2	2	2	2	2	2	2	19
German	3	3	3	3	3	3	3	3	3	27
Latin	8	7	7	6	6	5	5	5	5	54
French	–	5	5	4	4	4	4	4	4	34
English	–	–	–	4	4	3	3	3	3	20
History and geography	3	3	4	4	4	3	3	3	3	30
Natural history	2	2	2	2	2	2	–	–	–	12
Physics	–	–	–	–	–	3	3	3	3	12
Chemistry	–	–	–	–	–	–	2	2	2	6
Mathematics	5	4	5	5	5	5	5	5	5	44
Writing	3	2	–	–	–	–	–	–	–	5
Drawing	2	2	2	2	2	2	2	2	2	18
Total	29	30	30	32	32	32	32	32	32	281

The course of the same grade schools in other parts of Germany does not differ materially from the above plan. In a Leipsic city *Realgymnasium* a little more time is given to German in the lower classes than in the Prussian schools, and no time is given to penmanship. Five years are given to physics instead of four, but the whole number of hours is the same as given above. The entire number of *Realgymnasien* in Germany in 1888 was 135.

4. *Progymnasien.* — These schools are *Gymnasien* with a shortened course, generally seven years. They are not numerous, nor have they reason for existence independent of the examination for the one-year voluntary service in the army. By passing this examination at the end of *Obersecunda* class of the *Gymnasium*, corresponding to the highest class of the *Progymnasium*, a boy is permitted to serve in the army one year instead of three, which is otherwise required of all able-bodied young men.

Forty of the fifty-four *Progymnasien* in Germany in 1888 were in Prussia.

5. *Realprogymnasien.* — These are schools of a seven-years' course corresponding to the *Realgymnasien* without class *prima*. Graduates of these schools may enter the second class of a *Realgymnasium*, and pupils who have passed an examination for the first class may enter the one-year voluntary service in the army. More than one-eighth of all the high schools of Ger-

many are of this kind, and are situated mainly in Prussia. Until 1882 these schools were called in Prussia Higher Burger schools.

6. *Oberrealschulen.* — These are schools covering nine years, and having a course of study differing from the *Realgymnasien* in having no Latin and more French, English, physics, chemistry, mathematics, and drawing. There were only seventeen of these schools in Germany in 1888.

7. *Höhere Bürgerschulen.* — This class of schools has a course of studies extending over a period of six years. In the Prussian high burger schools French is taught the entire six years, English three, and arithmetic or algebra throughout the course. Graduation from these schools entitles the young man to the one-year service in the army, also entrance to the third class of the *Oberrealschulen.*

It will be understood, of course, that preceding the courses of all of these high schools there is supposed to be a preparatory course of three years, and that all high schools named thus far are for boys only.

8. *Höhere Mädchen Schulen.* — These schools have a ten-years' course, including the preparatory course. They are frequently joined with the girls' normal schools as preparatory schools. They differ from the *Gymnasien* and *Realgymnasien* in not including in the course either Latin or Greek, and in providing little opportunity for the study of the sciences. On the

other hand, they give much time to the study of the French and English languages and of literature.

The following programme presents the number of hours given weekly to each branch of study in Prussian schools of this kind: —

SUBJECTS.	NUMBER OF RECITATIONS WEEKLY.									
	First Year.	Second Year.	Third Year.	Fourth Year.	Fifth Year.	Sixth Year.	Seventh Year.	Eighth Year.	Ninth Year.	Total.
Religion	2	3	3	2	2	2	2	2	2	20
German	9	9	9	5	5	5	4	4	4	54
French	–	–	–	5	5	5	4	4	4	27
English	–	–	–	–	–	–	4	4	4	12
Arithmetic	3	4	4	4	4	4	2	2	2	29
History	–	–	–	–	–	2	2	4	4	22
Geography	–	–	2	2	2	2	2			
Natural History	–	–	–	–	2	2	2	2	2	10
Singing	–	–	–	2	2	2	2	2	2	12
Writing	–	–	–	2	2	–	–	–	–	4
Drawing	–	–	2	2	2	2	2	2	2	14
Gymnastics	2	2	2	2	2	2	2	2	2	18
Sewing	2	2	2	2	2	2	2	2	2	18
Total	18	20	24	28	30	30	30	30	30	240

In the public high schools for girls there are, according to the last reports, more male teachers than female teachers. In Prussia there were, in 1886, 1,271 male teachers and 926 female teachers in these schools.

By middle schools (*Mittelschulen*) is meant in Austria and Southern Germany *Gymnasien*, *Realgymnasien*, and *Oberrealschulen*. In Prussia they are the schools which stand between the elementary and high schools, or, rather, they are schools whose courses are modifications of the elementary course in the direction of high school work. The authorized course of studies provides for the study of French and

Middle Schools.

a more extended study of physics and geometry than is allowed in the elementary schools. In some of them, also, English and Latin may be studied.

A somewhat larger proportion of children take the high school course in Germany than in America. It is estimated[1] that in Prussia, in 1886, from 205,000 to 207,000 boys attended the high and middle schools, and from 150,000 to 155,000 girls attended the girls' higher and middle schools: or about seven per cent of the whole number of pupils attended schools in advance of the elementary schools. From the same report it is stated, that for every 10,000 inhabitants 54 boys attended the high schools, not counting those who attended the middle schools or private higher schools.

Number of Pupils.

The relative value of the classics and science is being vigorously discussed in Germany, and changes in the plans of study are being constantly made. A comparison of the programmes given above and those of the same schools thirty years ago shows some interesting changes. The *Gymnasium* has added weekly in French, 4 hours; in history and geography, 3; in mathematics, 2; in natural history, 2; in physics, 2. It has dropped 1 hour a week in religion and German, 9 hours in Latin, and 2 hours in Greek. The *Realgymnasium* has added 10 hours a week in Latin, and dropped 1 hour a week in religion, 2 hours

Recent Changes.

[1] Preus. Stat. p. 101.

in German, drawing, and writing, 3 hours in mathematics, and 4 hours in science. With such requirements, it is no wonder that the boys of the high schools of Germany know more of foreign languages than many of our college graduates. Although there is a change going on in respect to the teaching of the classics, and far less is required than formerly, yet the humanistic spirit of Erasmus and Trotzendorf is still rife in many schools, as shown by the wonderful facility with which the boys of the upper classes discuss the literature of Greece and Rome in the language of the authors themselves.

The chief end of instruction in the gymnasia is preparation for the university; and in this preparation the study of Latin and Greek is the central point of attention. An estimate of what is attempted in Latin may be had from the following requirements of the gymnasial course in Saxony:[1]

Latin and Greek.

Sexta (fourth year in school). — Regular inflections to deponent verbs; translation from Latin into German; syntax so far as it relates to an understanding of the simple sentence; memorizing of vocabulary and sentence.

Quinta. — Review of regular inflections; irregular inflections; some principal rules of syntax; translation of Latin into German and German into Latin, according to a practice book; written and extemporary work weekly; memorizing of vocabulary and sentences.

Quarta. — Reading of *Cornelius Nepos* or alternately with reading-book; review of syntax; translation from

[1] Götz's *Gesetz*, p. 72.

German into Latin; written and extemporary work weekly; memorizing of verses from the reading.

Untertertia. — Reading of *Cæsar de bello gallico* (at least three books), and a poetical piece; review of syntax taught in *Quarta;* cases and pronouns; rules of prosody and beginning of metre; written and extemporary work weekly. Material for memorizing is selected from the reading.

Obertertia. — Reading of *Cæsar de bello gallico* alternately with *bellum civile;* in the second half year also the easier orations of Cicero, preferably the *invectivæ in Catilinam, Ovid's Matamorphoses;* tenses and modes after a review of cases; practice in prosody; extemporary written exercises, if possible in close connection with the reading; material for memorizing from *Ovid* and *Cicero.*

Untersecunda. — Reading of Cicero's orations, preferably *de imperio Pompeii, pro Roscio, pro Archia,* and *Cato major;* reading of *Ovid,* and in the second half year *Virgil;* review and extension of syntax; written and extemporary work; metrical practice; memorizing from the reading.

Obersecunda. — Reading from the works of Sallust and Livy; Cicero's orations, *pro Sulla* and the second *Philippica,* Virgil's *Æneid;* written and extemporary work; three short compositions each half year; material for memorizing from the reading.

Unterprima. — Reading of Cicero's philosophical works, *Tusculanæ disputationes* and *de officiis,* also of the orations: *pro Milone, pro Sestio, pro Murena, Verrina,* iv. and v.; of the poets, *Horatii Carmina,* also a selection from other Roman lyrics, and for variety an appropriate selection from Terrence; four compositions each half year; written, extemporary, and conversation practice; material for memorizing from the reading, especially from Horace.

Oberprima. — Reading of Cicero's rhetorical works, *Brutus, Orator, de Oratore;* selection of letters; *Tacitus;*

reading of the poets, *Horatii Carmina*, *Satiræ*, and *Espistolæ*, also a selection from Plautus; four compositions each half year; written and extemporary work.

In regard to the methods of teaching Latin and Greek, the best that can be said is that all teachers of every grade seem to have a common purpose and an intelligent idea of reaching it. In none of the schools which I visited was there any attempt to make the work of the beginners easy or to delay necessary drill in grammar. In Latin the boy begins at the beginning of the gymnasium course the study of grammatical forms, and continues it with great thoroughness for three or four years. At first he uses a small book consisting of declensions, conjugations, and rules. Later he is given an exhaustive treatise upon grammar, which he uses throughout the course.

In the lowest grade I saw much interesting work in translating, in which the teacher's aim was evidently to teach the pupils how to study. In the abundant time for recitation which pupils of the lower grades have there is opportunity for this work which our teachers do not have. For example, the pupil is asked first to tell how many propositions there are in the sentence and why; to state what the predicate is; to give the principal parts of the verb, and conjugate it. He is then, by questions, led to find the subject, and to give the dependencies, first of the predicate and afterwards of the subject. As each new word or phrase is named

other forms are called for, the teacher giving the German expression and the pupils giving the Latin. In all of this work the questions are asked rapidly, and the answers are expected to be exact and prompt. From the very beginning is the habit of exactness and promptness cultivated. I have seen children of nine and ten years trained in a way which most American parents and teachers would regard as too severe.

Translation from German into Latin is also begun early, and is used as a means of fixing certain forms of construction. For example, after a Latin sentence has been translated and the necessary drill upon it has been given, the teacher asks the pupils to build up sentences progressively, using the words of the translated sentence, thus : Let us sleep. Let us not sleep. Let us not sleep eight hours. Let us not sleep more than eight hours, etc.

As the pupils advance, more and more attention is given to a finished style of translation and to the literature. As a help to a good style, the teacher frequently gives his own translation as a model, and afterwards calls upon one and another of the pupils to give their rendering. Criticisms abound both from the teacher and from the pupils themselves.

The reading of Latin in the advanced classes is given with much spirit and, judging from the character of some of the criticisms, with great exactness. In poetry expression is most carefully attended to. Every line

seems to mean something to the reader, and all members of the class enter into the spirit of the author much as a class of bright high-school pupils in America might enter into the rendering of "Hamlet" or "Merchant of Venice." The practice of conducting the recitation of the higher grades wholly in Latin still continues, although it is less extensively employed than formerly, and the practice, I am told, is being gradually abandoned.

Modern Languages.

As is seen in the courses of studies, French and English are the only modern languages taught in the high schools, the former being carried much farther than the latter.

The course in French in the *Realgymnasien* of Saxony is briefly as follows :[1] —

First Year. — Rules for pronunciation; practice in reading; forms through regular verbs; learning by heart common words and easy pieces; short written exercises.

Second Year. — Completion of declensions and conjugations; reading; memorizing short selections; oral and written grammatical practice.

Third Year. — Review of declensions and conjugations, especially of irregular verbs; beginning of syntax; reading; memorizing of poetical and prose selections; practice in conversation and writing.

Fourth Year. — Continuation of syntax; reading, according to ability, from an easy prose author; practice in conversation, written exercises, and compositions.

Fifth Year. — The language of the recitation from this time to be in French; review and completion of the grammar; reading of classical authors; history of literature of the seventeenth and first half of the eighteenth century; original compositions and speeches.

Sixth Year. — Continuation of reading, modern authors; review and completion of the history of literature; original compositions and speeches.

[1] Gotz's *Gestez*, p. 111.

At the close of the course, pupils are expected not only to be acquainted with the grammar, but also to translate, without the use of the lexicon, difficult prose and easy poetry, to understand a lecture delivered in French, to answer questions fluently in French, to write correctly French compositions, to compose letters, and to be acquainted with the history of French literature.

Practice varies as to the use of the mother tongue in teaching French and English. In most of the recitations of the lower classes, which I heard, the explanations and directions were all given in German. In the upper classes more and more use is made of the language which is being studied. In the courses of studies for the Saxony high and normal schools, the regulation is for the two higher classes to use French only in the French classes, and, "as a rule," only English in English classes.

There are a few native French and English teachers, but a large majority of the teachers of French and English are Germans. German boys and girls make difficult and rather poor work in pronouncing English; but in their knowledge of fine grammatical points they excel many of our high-school pupils.

The reading of classic authors, both French and English, is pursued to a surprising degree. Four years of the study of English in a *Realgymnasium* does not enable the student to speak with any degree of fluency, but it puts him in possession of a knowledge of the

literature which is highly creditable. Irving, Scott, Dickens, and Shakespeare seem to be the favorite authors.

The results in the study of science do not seem to be so much better than the results obtained in our best high schools, as the greater amount of time given to it would seem to demand. As a rule, the laboratories are not so complete as they are in our best schools, and the experiments by individual pupils are apparently not so common as experiments made by the teacher and exhibited to the pupils. There is, however, a more scientific treatment of the various subjects than is pursued in our public schools; owing, no doubt, to the greater length of the course. Much theoretical and mathematical work is done in physics, independent of experiments.

Science.

The following course of study in physics and chemistry in a *Realgymnasium* of Saxony shows the number and order of subjects studied in the allotted time; viz., five years for physics and three years for chemistry.

Physics.

Fifth Year. — Two hours a week: General properties of matter; equilibrium and movements of solid, liquid, and gaseous bodies.

Sixth Year. — Two hours a week: Magnetism and electricity.

Seventh Year. — Two hours a week: Heat and light.

Eighth Year. — Three hours a week: Galvanism; mathematical treatment of mechanics.

Ninth Year. — Three hours a week: Continuation of

mechanics; waves; acoustics; optics; introduction to spherical astronomy; general reviews.

Chemistry.

Seventh Year. — Two hours a week: Introduction to an understanding of chemical processes; inspection of the most important elements; chief points of stoichiometry; detailed study of oxygen, hydrogen, carbon, nitrogen, and their combinations with each other.

Eighth Year. — Two hours a week: Systematic treatment of other elements with special reference to mineralogy and arts; lessons in stoichiometry.

Ninth Year. — Two hours a week: Rest of metals and their combinations, with special reference to their technical application.

School Circulars.

Each of the higher grade of high schools issues every year a circular known under various names, containing the course of studies, daily programme, chronicle of events for the year, etc. One important feature of these circulars is an essay of several pages, generally written by a member of the faculty. The following titles indicate the character of these essays: "Oral practice in teaching Modern Languages in the Lower and Middle Classes of the *Realgymnasium;*" "Goethe's Relation to History and Politics;" "The Swedish-Polish War of 1655–60."

CHAPTER V

PRIVATE, INDUSTRIAL, AND CONTINUATION SCHOOLS

PRIVATE SCHOOLS

Private schools, or schools established and supported by private individuals or societies, are of various kinds, including the *Kindergärten* and other institutions for the care of children before they arrive at school age, elementary schools, and higher or middle schools. They are under the direction of the state or municipal government, so far at least as qualifications of teachers and courses of study are concerned.

Kinds of Private Schools.

In Prussia and other smaller states no teacher can be employed in a private school, or, for that matter, in a private family, who has not passed certain examinations required by the government. Nor can a private school be established until evidence is presented of the intention and ability of its founders to support a school equal in efficiency to public schools of the same kind. By law also no private school can be established where there is already sufficient accommodations in the public schools. It is generally understood, however, that this law is not strictly enforced,

Conditions of Maintenance.

and that there are many private schools, particularly in cities and large towns, where there are ample accommodations for all pupils in the public schools.

The elementary private schools have materially decreased in number during the past twenty years. The following table[1] shows to what extent they decreased in Prussia between the years 1871 and 1886.

Number of Private Schools.

	CITY SCHOOLS.		RURAL SCHOOLS.	
	1871	1886	1871	1886
Number of Schools . .	1,382	894	486	315
" " Classes . .	3,744	3,266	737	517
" " Pupils . .	93,720	68,698	13,401	8,438

Most of the private higher or middle schools are for girls, and a large majority of their teachers are women. In Prussia, of the 68,373 children attending the private middle schools in 1886, 55,748 were girls; and of the 3,126 teachers of such schools, 2,422 were women.[2]

Kindergärten.

Although the *Kindergärten* of Germany are, many of them, more perfectly developed than ours, they do not seem to have as strong a hold upon the people or to have as large a place in the education of children in Germany as in America.

As in this country, there seem to be two divisions or schools of kindergartners, the chief difference between them being in the closeness of adherence to Fröbel's purpose and plans. One of the most complete and satisfactory *Kindergärten* which I saw was the school

[1] Preus. Stat. p. 105. [2] Preus. Stat. p. 106.

in direct charge of a niece of Fröbel — Frau Schrader. The institution is located in Berlin, and consists of a Kindergarten, classes for primary instruction, classes in handwork for both boys and girls, a normal school for kindergartners, a cooking-school, and a home for young women. The Kindergarten is divided into four sections, each section doing the work of one year. In this school the young ladies of the normal class teach under the direction of experienced teachers. There is a garden connected with the school, which is brought into use in the proper season.

In addition to the *Kindergärten* there are other institutions for children under school age, which are in some places partially supported by the city or town, but which are generally in charge of charitable associations. These institutions consist of day nurseries (*Krippen*), where babies are taken care of while their mothers are at work, and of schools for young children (*Warteschulen*) whose parents are unable to care for them. In some of these schools there are classes for instruction, but the children cannot be kept in them beyond a certain time.

Nurseries.

INDUSTRIAL SCHOOLS

Besides the higher technical schools corresponding to our technological schools, there are in various parts of Germany special trade schools (*Baugewerkschulen*) receiving more or less assistance

Trade Schools.

from the state and municipality, and having a regular four years' course and a graduation examination.

Carpenters', cabinet-makers', and machinists' trades are learned in these schools; and lessons are given in the elementary and higher branches, including algebra, geometry, physics, drawing, and architecture. Prussia has ten such schools, Saxony six, and Bavaria and Würtemberg one each.

There are other schools (*Fachschulen*) in which technical handwork is taught, such as weaving, carving, engraving, working in straw, basket-making, pottery-making, etc. These schools are for men and for boys who are not within the legal school age.

Within a few years many manual training schools or shops have been founded in which boys of all ages are taught outside of school hours some form of handwork. These schools are supported by societies and private individuals, the pupils paying a nominal tuition fee only. About two-thirds of the pupils of these schools are from elementary schools, the rest from middle and private schools. Some of the schools are established for the purpose of aiding a particular industry, as broom and basket making, straw-working, etc.; but most of them have the evident purpose of training as well as utility, and find the purpose best reached in pasteboard work, wood-carving, and joiner work. A few schools give instruction in iron and brass working. The educational or pedagogi-

Manual Training Schools.

cal value of the instruction given is shown by the increasing number of professional or regular teachers employed. In 1888 only nineteen per cent of the teachers were artisans against seventy-one per cent eight years before.

Perhaps the best known and most complete of the manual training schools is the Leipsic school, which is in charge of the German Society for Manual Training, under the leadership of Dr. W. Götze. This school has special courses for teachers during vacations, and also courses for boys out of school hours. The building is provided by the city, free of charge, in which work in pasteboard, wood (carving and joiner work), and metal is done. All classes of boys were in attendance at the time of my visit there, and I was told that the boys of the so-called better families were not so painstaking and patient in their work as the boys of the middle and lower classes. They were given some degree of freedom in selecting their subjects of instruction; but, after having selected them, their course was carefully graded, and no one could take up the advanced work until he had done satisfactorily the work of the lower grade. From the work I saw completed I judged that utility was the prime object sought, although the educational training value of the work was not lost sight of. Dr. Götze is the most active and ardent advocate of placing manual training among the required subjects of instruction in the people's elementary schools.

Leipsic School.

CONTINUATION SCHOOLS.

Continuation schools are schools in which the instruction of the people's elementary schools is continued with reference especially to the practical needs of apprentices and other young workmen and workwomen.

As a rule, only the study of reading, writing, and arithmetic is made compulsory, although, in many places, provision is made for instruction in natural history, elementary science, geography, history, physiology, geometry, book-keeping, and drawing. The last two subjects are taught to apprentices and always with reference to their needs.

Subjects of Instruction.

These schools are in session from two to four hours a week, either in the evening or on Sundays, depending upon the location of the school and time of year.

Times of Sessions.

Discipline is strictly maintained in these as in other schools by the prompt support of boards and judges. Several instances are given [1] of the punishment of disorderly pupils by fines and imprisonment. Even the conduct of boys out of school hours seems to be under the control of the school officials in some places. I saw posted, in one room where a continuation school was kept, a notice forbidding boys under a certain age to smoke or to enter a beer saloon.

Discipline.

Throughout the greater part of Germany these

[1] Pädagogischer Jahresbericht, 1889, p. 563.

schools are established by law, and attendance upon them is compulsory for boys during a certain period of time after the completion of the elementary school course. In Bavaria the time of compulsory attendance for such boys is three years, with permission to attend five years.

Attendance.

In Saxony and some of the smaller states attendance upon a continuation school is made compulsory for all boys two years after they have graduated from the people's elementary school, unless they attend a trade school of some kind.

In Prussia there is no uniform practice, yet it may be said that both trade and continuation schools are common in all parts of the kingdom, and that attendance upon them is made compulsory in some sections.

Considerable attention has been given lately to the subject of continuation schools for girls. It is urged that instruction in household duties should be made a part of the curriculum, and that the time for compulsory attendance should be increased. At present the attendance of girls upon these schools is obligatory only in Baden and Würtemberg. In Saxony and in two of the smaller states the attendance of girls may be made obligatory by the communities.

Schools for Girls.

As would be expected, these schools are much better organized in cities than in the country; and of the cities by far the most extensive system of evening and Sunday schools is that of Berlin.

Schools in Berlin.

Besides the schools whose object is to instruct in some particular industry, and whose support and management falls partly upon private corporations and partly upon the city, there are the following schools, intended to supplement the work of the public day schools :[1] —

1. Schools whose course is a continuation of a middle or high school course. The subjects of instruction are French, English, German, mercantile arithmetic, book-keeping, drawing, natural science, commercial law, and commercial geography. There are two terms of twenty weeks each, and the school is in session four evenings in the week and Sunday forenoons. A small fee is charged for tuition, depending upon the number of hours of instruction.

2. Continuation schools for boys who have graduated from the public elementary schools. The subjects taught are German (reading, writing, and language), arithmetic, and drawing, and, under certain circumstances, book-keeping, geometry, physics, geography, history, foreign languages, and singing. A small fee is charged for advanced studies; for the others the instruction is free. There are two evening sessions of two hours each, and a Sunday session of four hours — forty weeks in the year.

3. Continuation schools for girls in which German,

[1] These facts are taken from *Grundsätze für die Verwaltung des Fortbildungs-Schulwesens der Stadt Berlin*, 1887.

arithmetic, book-keeping, drawing, sewing, embroidering, and dress-cutting, are taught three evenings a week, and Sunday forenoons. A small tuition fee, from one-half *Mark* to one *Mark* a month, is charged the pupils.

4. Free continuation schools for deaf and dumb, and for the blind. The common branches only are taught.

5. Free schools for youth of both sexes, in which, in addition to the common branches, there is given instruction in special kinds of work, as chimney-sweeping, shoemaking, and baking.

The rooms, with heating and lighting, are provided by the city. All other expenses are borne by private associations.

Nearly all the teachers of the above-named schools are principals and teachers of day schools, their salaries ranging from one *Mark* to five *Marks* for each hour's instruction.

CHAPTER VI

ELEMENTARY SCHOOLS

Besides the primary preparatory schools (*Vorschulen*) connected with the high schools, there are elementary schools which correspond to our public primary and grammar schools. These schools are now free in many parts of Germany, and where they are not free, only a nominal sum is charged for tuition. The course of the elementary people's schools (*Volkschulen*) generally covers a period of eight years, and the subjects taught are the same as those which are taught in our elementary schools, together with three or four additional subjects.

Graded Schools.

Pupils of the same age and attainments are placed together for instruction whenever it is possible to do so. In cities and large towns it is the almost universal custom to make a division of the pupils into eight grades, and to place pupils of each grade in one room. Each grade of pupils is in charge of a teacher who may or may not spend his entire time with them. He is frequently given work in other rooms of the building. Sometimes the work

outside of his room is all of one kind, as geography or arithmetic.

The following table indicates the comparative amount of time given to each branch of instruction in graded schools: —

Subjects.	Number of Recitations Weekly.						
	First and Second Years.	Third Year.	Fourth Year.	Fifth Year.	Sixth Year.	Seventh Year.	Eighth Year.
Religion	3	6	4	4	5	6	6
Language	1	$2\frac{1}{2}$	$4\frac{1}{2}$	4	3	3	4
Reading	10	$5\frac{1}{2}$	4	3	3	2	2
Writing		$3\frac{1}{2}$	4	3	3	2	2
Arithmetic	6	6	4	4	4	4	4
History or geography	–	–	–	2	2	2	2
Object lessons	3	2	–	–	–	–	–
Natural History	–	–	2	2	2	1	–
Geometry	–	–	–	–	–	2	2
Physics	–	–	–	–	–	2	2
Drawing	1	2	2	2	2	2	2
Singing	–	–	2	2	2	2	2
Gymnastics	–	–	2	2	2	2	2
Total	23	$27\frac{1}{2}$	$28\frac{1}{2}$	28	28	30	30

Sewing is required in the higher grades of girls' schools.

From this programme we learn that the elementary schools of Germany are required to give instruction in religion (including Bible and church history and the catechism), geometry, elementary science, ancient history and gymnastics, — all of which are seldom or never systematically taught in corresponding schools of this country. The course in arithmetic does not embrace so many subjects as with us, and there is less of the geography of foreign countries and more of home geography than is given in our schools. In

other respects there is not much difference in the subjects required to be taught in the elementary schools of the two countries. We should always remember, however, that with us the requirements concerning subjects of instruction are not always observed.

Partially Graded Schools.

Schools having two, three, or four teachers are classified so as to give a fair proportion of work to each teacher.

A school having two teachers is divided into two divisions, called primary and advanced. Each division is divided into two classes, which gives two years' time to each class.

The number of hours a week given to each subject of instruction in Prussian schools of this kind is shown in the following table: —

SUBJECTS.	PRIMARY DEPARTMENT.		ADVANCED DEPARTMENT.	
	Lower Class.	Higher Class.	Lower Class.	Higher Class.
Religion	4	4	4	4
Language	11	8	8	8
Arithmetic	4	4	4	4
Geometry	–	–	–	2
Drawing	–	2	2	2
Realen (geography, history, natural history)	–	6	6	8
Music	1	2	2	2
Gymnastics	2	2	2	2

The ungraded (*Einklassige*) schools are quite differently classified from what they are in this country. In

Ungraded Schools.

ungraded schools having but one teacher there are in general two plans. One plan is to separate the school into three divisions and allow as

much time as possible for each division to recite. In some branches all three classes recite at the same time, the pupils of lower classes following as best they can or working at a given task.

The following table indicates the number of hours a week given in Prussia to each subject of study for the three divisions of an *Einklassige* school.

SUBJECTS.	Lowest Class.	Middle Class.	Advanced Class.
Religion	4	5	5
Language	11	10	8
Arithmetic	4	4	4
Geometry	–	–	1
Drawing	–	1	2
Realen (geography, history, and natural history)	–	6	6
Music	1	2	2
Gymnastics	–	2	2
Total,	20	30	30

A slight departure from this classification seems to be made in some schools. For example, in Eisenach I found a school of thirty-nine pupils divided in most subjects into three sections; but in arithmetic there were five sections, and in reading four. In this school the pupils who were not reciting were given sufficient work to do, and the recitations of twenty or twenty-five minutes' duration followed each other very promptly.

When the number of pupils is too large to be taught by one teacher at a time, or when the conditions are not favorable for two teachers to be employed, half-day schools are formed, the younger pupils, or those of the

first four years in school, attending afternoons, and the advanced pupils forenoons. By this arrangement the primary class has twelve or more recitations a week, and the advanced class eighteen or twenty recitations.

The recitation period, as in the graded school, is about fifty minutes in length; and, when the class is separated into sections, the pupils of each section are given work to do suited to their capacity, although all are supposed to be reciting during the period. By this arrangement there are about eighteen recitations a week with the older pupils, and twelve with the younger. In a school of this kind near Leipsic the following daily programme was followed: —

Forenoon.

Hour.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
First	Catechism.	Bible stories and explanations.	History.	Catechism.	Bible history and explanation.	Physics
Second	Language and reading.	German sentences. etc.	Arithmetic and geometry.	German and writing.	German.	Singing.
Third	Arithmetic.	Geography.	II. Observation lessons, home geography, and singing.	Arithmetic.	Drawing.	II. Numbers.
Fourth	Writing.	—	II. Reading and writing.	Reading and writing.	—	II. Reading and writing.

Afternoon.

First	Bible stories.	Bible stories.	—	Bible stories.	Observation lessons and home geography.	—
Second	Reading and writing.	Reading and writing.	—	Reading and writing.	Reading and writing.	—
Third	—	Numbers.	—	—	Numbers.	—

From this programme it appears that the older pupils have eighteen recitations a week, of which six are in language, including reading, writing, and language or grammar, three in arithmetic and geometry, four in religion, Bible history, catechism, etc., one each in geography, history, drawing, singing, and physics. The younger pupils have fourteen recitations a week, of which six are in reading and writing, three in numbers, three in Bible stories, and two in observation lessons and home geography, leaving a short time during one day for singing.

Such an order of recitations would hardly be tolerated in the schools of many of our rural neighborhoods, where it is thought that a teacher is seriously neglecting his duty who fails to hear every pupil recite in every branch of the curriculum at least once a day.

Course of Studies.

A detailed course of studies is carefully written out by the graded school principal or by the district inspector. These courses differ only in details of management and methods, since they

are an elaboration of the general course prescribed by laws or codes. Copies of the course are placed in the hands of assistant teachers, who record in a book provided for the purpose the topics which are taught each day in every subject.

Tuition.

In most parts of Germany tuition in the common elementary schools is now free, and text-books are provided for all pupils whose parents cannot afford to pay for them. Where tuition is charged it is only a nominal sum, — from two to five dollars a year.

So far as I could learn, the cost of maintaining the elementary schools is borne by the community to the extent of its ability. In some of the poorer country districts the schools are supported entirely by the general government, while in others the local community bears the entire expense by taxation.

Sexes.

In the country the boys and girls are generally brought together in the same school. In cities the custom is to separate the sexes in all of the upper classes, and in many of the lower classes. In partially graded schools, i.e., in schools having two or three teachers, the preference in Prussia seems to be to separate the sexes and to form ungraded (*Einklassige*) schools.

From what has been said in respect to the required qualifications of teachers, courses of study, character of text-books, and length of recitations, it will be inferred that the general character of the work done in

the schoolroom is in many respects quite different from that done in our own schools. Less difference in the quality of teaching, and greater uniformity in results, than with us are observable. Few teachers will be found who have not a definite object in all their work, and who do not strive to reach that object in a systematic and methodical way. We may not always agree with the opinions of these teachers ; yet we cannot doubt that they have well-studied opinions, both in regard to the object to be reached and the means to be taken to reach it.

General Characteristics.

One characteristic of all the instruction in German schools is thoroughness. Not so much is attempted in the same length of time as with us, but it is more thoroughly done. The subjects in geography and arithmetic are fewer than we generally teach, but at the end of the course the pupils have thoroughly learned the subjects. This result is reached by systematic teaching and frequent reviews. Not unfrequently the points of a single lesson will be reviewed several times, and they will be brought in connection with points which were learned a week or a month before.

Another characteristic of the German teacher is his entire mastery of the subject he teaches. As he is expected to supply what many of our text-books give, he must be prepared with all parts of the subject in hand, and all subjects relating to it. In all information studies, like geography and history, he talks earnestly

for several minutes to his listening pupils, who are expected to reproduce what he says in their own language. They are frequently stopped and corrected for inaccuracies in facts and expressions. Again the subject will be taken up by the teacher, and again reproduced by the pupils, until the long recitation of fifty minutes or more is ended. At the beginning of the recitation a review of what has preceded is frequently taken, and at the close there may be a general summary of all that has been said.

The use of objects and pictures in teaching and in illustrating subjects which have been presented is a marked feature of the elementary schools; and in all schools the value of skilful questioning in leading pupils to the unknown from the known seems to be well understood by teachers. Pupils of the best schools practise in exercise books and in connection with oral recitations the making of diagrams and pictures illustrating facts which have been learned.

Further and more detailed accounts of the actual work done in the elementary schools are given in the following chapters.

CHAPTER VII

OBSERVATION LESSONS AND ELEMENTARY SCIENCE

In no respect do the schools of Germany differ from our own schools more than in the extent to which observation and elementary science lessons are pursued. In all of the people's schools nearly as much time is allowed for these lessons as for arithmetic, and quite as much as for geography. From two to four recitations a week, of nearly an hour each, through the entire course are given to lessons upon plants, animals, minerals, physics, or chemistry. The importance of this work lies quite as much in the logical sequence of topics, and in its bearing upon other subjects, as in the extent of the observations.

In many schools the observation of plants, animals, and minerals does not begin until the third and fourth years; or, if these objects are observed, it is only in a general way. For example, the plan of study for the first three years in the grand duchy of Baden has the following outlines:—

Plans for Early Object Lessons.

First Year. — Naming and describing objects in the immediate neighborhood; writing clear simple sentences

in connection with observation; and showing the relation of children to parents, to household, to school, and to church.

Second Year. — Conversations upon familiar plants, animals, and minerals, concerning their uses, etc.; in the same manner, the various articles in common use and their manufacture; instruction regarding the treatment of animals and care of plants.

Third Year. — Continuation of animal, plant, and mineral lessons; home geography.

In the schools working under this and other plans of study for the first three years there are observed and talked about, in addition to the common plants, animals, and minerals, such familiar objects as *the stove*, *the egg*, *the house*, *the schoolroom*, *the bed*, *clothing*, *food*, *the garden*, *the field*.

Plans for Lessons in Natural History.

The elaborated plans of natural history instruction in many schools seem to be based upon the idea of "concentric courses," each course, except the last, being a preparation for the following one. Some teachers have adopted Luben's idea in this respect as follows: —

1. Observation of individual objects.

2. Comparison of individuals by placing together objects having the same attributes.

3. Classification and geographical location.

4. (For plants and animals) Anatomy and physiology.

There are many teachers who take exception to the plan of instruction above outlined on the ground that

it is too systematic and formal, leaving out of account the important features of internal organization and historical development according to certain laws from known causes.

Still others there are who seem to emphasize the practical value of these lessons, and attach great importance to the study of objects as they exist in relation to their natural surroundings. The following general scheme for the study of plants illustrates the character of work required under this plan: —

1. The plant considered by itself.
   a. Description: root, stem, leaves, blossoms, fruit, location and time of blossoming.
   b. Its life: first appearance, growth, length of life, annual or perennial.

2. The plant as a part of nature.
   a. Relations to soil, moisture, climate; opposing influences.
   b. Relations to the plants in the neighborhood: growing alone or with other plants; shade; parasite.

3. The plant in relation to man.
   Use; harmful effects of.

In a similar manner the animals may be studied.

Although these various plans differ in respect to the chief end to be attained, there is no difference of opinion as to the necessity of presenting the objects themselves for study. All insist upon that, and where the

objects cannot be conveniently presented, representations of them in various forms are used instead.

Topical Outlines.

The following topical outlines, copied from a special plan of study, indicate the kind of work which is attempted in many schools of Southern Germany, beginning with the fourth year. It should be understood that these topics are placed before the pupils one at a time, as the observations are made or as the information is given: 1. The four fundamental forms of organs (stem, root, leaves, and hairs). 2. Functions of these organs. 3. Growth of stems, outer and inner. 4. Underground stems. 5. Above-ground stems. 6. Length of life of stem. 7. Buds: growth, kinds, covering, position, unfolding, development, service to the plant. 8. Malformations and diseases of stems. 9. Influence upon the stem of location, soil, light and warmth, height, direction of wind, etc. 10. Growth of root. 11. Kinds of roots. 12. Effects of changing food. 13. Influence of location and soil. 14. Duration of root. 15. Leaves, kinds, etc. 16. Development of leaves. 17. Forms of leaves. 18. Situation of leaves. 19. Cause of malformation and diseases of leaves. 20. Influence of food, light, etc., upon the leaves. 21. Blossoms. 22. Corolla. 23. Characteristic forms of blossoms. 24. Essential and unessential parts of flower. 25. Use of flower coverings. 26. Influence of light, moisture, etc., upon the formation of the flower. 27. Structure and use of stamens. 28. Structure and

use of pistils. 29. Fertilization. 30. The fruit. 31. Seeds — structure and germination. 32. Dissemination of fruits and seeds. 33. Influence of location upon quantity of fruit and seeds.

In the same course of studies there are given lists of plants and animals to be observed each year, and topics as a guide to individual observations. There is also given a plan for general observation, which is intended to prepare pupils for the study of individual plants and animals. Some points of this general plan are as follows: Plants that grow in the water, in swamps, in fields, in the garden, on the rocks, etc. Difference in the structure of plants and parts of plants in the same and in different localities, — upon the same and different kinds of soil. Change in plants and trees produced by cultivation. What weeds appear in different places and in different kinds of soil. Sudden appearance and disappearance of plants. Domestic and wild animals. Food and sleeping-places of various animals. Useful and harmful animals. In what time, upon what plants, and under what circumstances, is harm done by animals.

So far as I could discover in the general and special plans of study, and in the interpretation of them by teachers, the evident purpose of the natural history lessons is, (1) cultivation of the observing faculties; (2) assistance to a better understanding of other studies; (3) acquisition of facts as a

Objects sought.

basis for scientific study; (4) development of a love of the beautiful in nature and training in ethics.

Even in schools where no attempt is made to connect together the various studies, as is done in the Herbartian schools, observation lessons, especially those of the first three years, are brought into close relation with other studies. This is particularly observable in language, reading, preparation for geography (*Heimatkunde*), and singing. Many of the reading-books are evidently arranged with special reference to a use in supplementing the elementary nature-lessons, thus fixing important facts and making a good application of them. Singing-books also abound in songs intended to arouse a love of nature.

Relation to Other Studies.

An important end of instruction in natural history seems to be the observation of such features and objects as will be useful in subsequent classification. The plan of study for the Saxony elementary schools makes the following provision on this point: In selecting objects for study in the various steps, those should be chosen which are useful as representatives of classes, orders, and families in the three natural kingdoms.

Basis for Scientific Study.

In the early object-lessons, as well as in the later ones in natural history, there is observable far more ethical training than in most schools in this country where similar lessons are taught. For example, in

one general plan of study it is stated, after speaking of the obvious purposes of the lessons: "At the same time there should be given, in a fitting way, the representation and comprehension of the ethical relations of the child to the objects observed and talked about." Especially is kindness to animals enjoined upon children in all lessons upon the domestic and harmless animals.

Ethical Treatment of Subjects.

Some of the plans of study and daily programmes designate the early object-lessons as lessons for expression (*Gedanken Ausdruck*). These lessons are upon familiar objects, as has been said, and the main purpose of the teacher in them is to develop expression rather than to excite ideas. The following two lessons are examples of this kind of work: —

Expression of Thoughts.

Eighth Class. — First Year.

First part of recitation not heard.

Pupils answer in entire sentences the following questions: —

What is the use of the rim? What is used instead of the rim sometimes? What is the use of the forepiece? From what do the rim and forepiece protect the eyes? From what does the hat protect the head? (Cold, wind, snow, rain.) When should you keep your hat on? When should you take it off? (Various times given, and a pupil is asked to

The Hat.

show how he would take his hat off in greeting a lady or an older person.) What kind of children take off their hats in greeting?

First Year Grade.

Common Objects.

Teacher begins by asking the children what they saw the night before, and the following statements are brought out: "The moon looked round." "The moon looked round like a circle." "The stars shone brightly." "The stars had rays of light." The teacher asks the children what they talked about the day before, and reviews with them the resemblances of the dog and cat. Answers are given in entire sentences. Then the advance lesson is taken, the purpose of which is to observe and state *differences* in size and shape of head, shape of ears, construction of foot, hair, etc.

Large charts are hung on the wall before the children. The teacher insists upon exact answers after the observation has been made from the chart. The form of statement required in every case is in the form of contrast, like the following: "The dog's head is long like a horse's, but the cat's is short." The children find considerable difficulty in forming the sentences. After a sentence is made in the correct form, it is repeated by the pupils individually and in concert.

The following notes of lessons observed illustrate various noteworthy points of excellence : —

Third Year in School.

Lesson on Plants.

Subject : Parts of plant. Every pupil (there are sixty in the class) has an entire plant to examine. First part of the lesson is evidently a review of the previous lesson. The teacher, by rapid questioning, constantly calls for facts which the pupils observe in the plant. The following order is observed : root, stem, leaf, flower; afterward the chief characteristics of each part are observed and expressed in entire sentences, few technical terms being used. The following questions serve as an example of the kind of questioning upon *new* observations : —

Notice the stem — is it smooth, or rough ? What is the color ? This is the rind, or bark ; what is next ? What do you see in the middle ? What is in the middle of the leaf ?

Third Year in School.

Lesson on Leaves and Blossoms.

Charts of leaves before the children. First a review is given of what has been observed in the various shapes of leaves. The pupils draw the shapes upon the blackboard and describe them in sentences. The advance lesson is upon the blossoms. Parts of flower, color, and form are taught.

Male and female flowers are observed and characteristics of each are given.

Sixth Class. — Third Year.

Lesson on Birds.

Practice School. Subject: "Woodpecker." Stuffed woodpeckers — four varieties — on the desk of the teacher. Teacher asks questions, showing the specimens to the school as a whole and to small groups of pupils. The following points are brought out, each point being discussed until the fact is discovered by one or more of the pupils: Habits of woodpecker observed by children. Similarity in color, — dissimilarity. Structure of foot. Claws of birds previously observed. Claws of woodpecker; how different? Why? Food of woodpecker; what and where found? How does the woodpecker know where in the tree the food is? Form of bill; use. Form of tail; why long? Why strong? Do they fly in flocks? Why not? Do they remain here in winter? Why? In what regions are they found? Where not found? Why? What kind of trees contain the food? Why? Out of what does the woodpecker build its nest? How is the nest built? Why? Review of all in good statements.

The two points emphasized in this lesson are: first, encouragement of children to observe birds; secondly, leading them to know the use of the woodpecker.

Fourth Class. — Fifth Year.

Large colored charts hung before the pupils. Blackboard used for drawing special parts. The following questions indicate the kind of facts learned by observation of the pictures. Answers interspersed with information given by the teacher. Occasional review by pupils of points of observation and information.

Lesson on the Beaver.

What is the color of the fur? What about its thickness? Use of the fur? Shape and situation of teeth? Why? Kind and number of claws? Use? Shape of tail? Use? Where is its home? What is its food? What its habits?

At the close of lesson all facts are reviewed and told in a connected story.

Third Class. — Sixth Year.

After observation from specimens and chart, the following questions are asked and answered in complete sentences.

How is the worm like the beetle? Name all points of resemblance. Name all points of difference. How many parts has the beetle? What do we call animals that have three parts? (*Körper Thiere*). What other name, using a foreign word? (*insecta.*) Name all the insects you know. What two great divisions of insects? Examples of insects

Lesson on Angleworm and Insects.

that have a perfect metamorpohsis? Examples of insects that have an imperfect metamorphosis?

The blackboard is in constant use in illustrating points of difference and resemblance.

Intermediate Grade.

Lesson on Crab and Worm.

Subject: "The Crab and the Worm." A specimen in a glass case, also pictures on the wall. Pupils first asked to repeat the substance of previous lesson. The points of difference between the crab and other animals stated in complete sentences, in respect to color, form of parts, habits, use, etc. Then follows a new lesson upon the worm, the pupils being led to observe the specimen or picture, and answer questions like the following: What can you say of its length? It consists of what? How many parts? What do you see on the outside? What is it like? What are its habits? What must it have to bore with? How is the borer constructed? How is it a weather prophet? When does it burrow deep in the ground? When shallow? Its food consists of what? Where found? Why? Use of the worm?

An outline is placed upon the blackboard; five points are made, each point expressed by a single word. Pupils take up each point separately and give oral statements in correct language. They afterwards

write out a description of the worm in books provided for the purpose.

Observation, Experience, and Information.

There are frequently combined in the oral lessons, matters of observation, experience, and information, as shown by the following notes of a lesson heard in Leipsic.

Upper Primary Grade.

The Surrounding Country.

Map of the city and vicinity hung before the pupils. The boundaries of the inner or old part of the city are pointed out. Where is the new part of the city? What does it include? Compare in size the inner part with the whole city. Compare the inner part with the outer part. Compare the boundaries. Why was the old city small? What can you say of the walls? Why was there a wall? Here the teacher explains the use of the wall, etc.

Pupils are asked to give directions of certain places from the schoolhouse. Map placed in different positions and directions noted. Brooks and their branches pointed out. They flow in what direction? Into what do they flow? Into what does the water flow finally? What is the use of the water here? The mills are pointed out, and pupils are asked what is manufactured here, and what flour is made from. The experience of Robinson Crusoe is referred to. The pupils find difficulty in answering the question how water helps to make the flour, and the teacher goes to the board and

draws a water-wheel and water flowing upon it so as to make it move. He describes the parts of the wheel as he draws, and asks questions to bring out certain ideas. He then shows in the same way the connection of the water-wheel with other wheels for the manufacture of the flour. Pupils repeat singly the points that have been taught and told, giving the origin of the different streets and places, e.g., Goethe, Schiller, Kloster (Cloister), Barfuss Mühle (Barefoot Mill), etc.

The above examples give a general idea of the methods usually employed in giving observation lessons in the lower grades. Without the use of shorthand it is difficult to give a full report of a lesson, or to give such a report as will show exactly how these recitations are conducted. To do this, and, at the same time, to illustrate the kind of work done in the intermediate (fourth or fifth year) grades, I quote in full the following model lesson given in one[1] of the many books for teachers. Some answers which the pupils are supposed to make are omitted.

Lesson in full upon the Hazel-bush.

The hazel-bush is made the subject of instruction twice in the year, in spring and in the autumn. The lesson in spring treats of the hazel-bush while it is in blossom, and the following facts are brought out concerning the growth of blossoms and stem : —

[1] Lehrbuch der Erziehung und des Unterrichts für Lehrer und Lehrerinnen, von F. Leutz, II. Theil, pp. 266, 267.

Whence come so many hazel-bushes in the woods? If you wish to plant one in the garden, what would you do? We put a hazel-nut in the earth. On account of the moisture the kernel is spread open and the little rootlet which grows in the earth comes out, and a little stem which grows in the air also appears. Any one may see these little things in the hazel-nut kernels. We will cut a nut in two and split open the kernel. Here below, see. How do the young shoots of the hazel-bush grow? Straight in the air like rods, as you see here on the chart. The old stems spread into branches. There are no leaves here, as you see. Where will they come from? Why are they enveloped in so many coverings? What do the little buds consist of? Where are they on the branch? There is where the leaves were last year. You can see traces of them in the three black points near the buds where the leaf-stalks grew.

The most remarkable things are the little catkins. They are the blossoms of the hazel-bush. Are they suddenly grown in the spring? They have hung there since autumn. All through the winter have they been there, but they have not been of such a beautiful golden color. Whence does the color come? From the warmth of the sun. The blossoms you see come before the leaves. What other trees or bushes bear blossoms first? Look carefully and see what the long catkins are made of? What do you see under every little scale? I will draw on the blackboard one of these little scales, only larger. There are here eight little golden bodies separated in the middle. We have seen already similar little bodies. They are little dust-bags. Now you can guess where all the golden dust comes from if the branch is shaken. The bush is often shaken. How? When the wind shakes out all the dust then the little catkins become empty and fall off.

You know where the pollen must be if there is to be any fruit. Think of the tulip. It was, you remember, very conveniently constructed. Why? The stamens and the stigmas were close together. Where are the stigmas here? In the catkins, are they not? Who sees them? Look at all the little buds carefully. You will see red threads on the points of some of them. Those are the stigmas. You cannot see them in winter, but when the warm spring sun comes then they put out their little heads. They are covered with bud scales. Why? Just like little children in a warm bed. When the wind blows and clouds of dust come out of the little catkins, then many of the little grains will fall from the red threads, and then what will happen? See. So wonderfully is the bush made that the wind must help it make hazel-nuts. But sometimes our little red threads will be caught by frosty weather, then they will freeze, or in the time when the powder will fall out it will rain a long time, so that there can be no stigmas. What will follow then?

Now again answer the questions. What do the little catkins consist of? What do they carry? When does the dust-bag empty itself? Why? Where are the stigmas? When does the fruit appear?

What is the difference between the construction of the blossom of the hazel-nut and that of the tulip? (Others compared.) In the hazel the dust-threads and stigmas are together. In other flowers they are found in different blossoms. Here all together (not masculine and feminine, but dust blossoms and fruit blossoms). What plants have similar blossoms? Walnut, alder, oak. What do you call the blossoms? Catkins. What may we name all of these trees then? Catkin-trees or catkin-bearers.

A second lesson on the hazel-bush is given for the purpose of observing the stem.

In August another lesson is given to observe the leaves and fruit.

Physics.

Physics and, in some places, chemistry are taught in the last year or two years of the elementary people's schools. In all of the courses of study the teachers are directed to teach only the most important peculiarities of the forces and phenomena of nature, such as gravitation, sound, light, heat, and electricity, and to explain the most useful machines, such as the balance, pulley, lever, pump, etc.

The kind and amount of instruction generally pursued in these schools are seen from the following outline taken from a text-book in common use.[1] The part devoted to physics consists of less than fifty pages, and is entirely devoid of illustrations. The subjects are supposed to be taught before the book is studied.

[1] Welt Kunde — von Hütmann, Marten, Renner. Hannover, 1889.

I. Solid Bodies.

1. Solid, liquid, and gaseous bodies compared. 2. Weight; gravity; attraction. 3. Equilibrium, stable and unstable. 4 Lever — pulley, wheel and axle. 5. Inclined plane; Parallel forces. 6. Falling bodies, laws. 7. Inertia; friction. 8. The pendulum. 9. Mechanical work; machines.

II. Liquid Bodies.

1. Height of fluids in connecting tubes. 2. Floating bodies. 3. Specific gravity. 4. Adhesion and capillary attraction.

III. Gases.

1. Elasticity. 2. Pressure of the atmosphere. 3. Barometer; pump.

IV. Sound.

1. Origin and transmission. 2. Echo.

V. Heat.

1. Creation of heat by means of friction, pressure, blows, etc. 2. Creation of heat by chemical action. 3. Heat from the sun's rays. 4. Expansion of bodies by heat. 5. The thermometer. 6. Effect of heat upon water. 7. Water and air currents. 8. Melting of solids. 9. Evaporation of water by heat. 10. Steam-engine. 11. Transmission of heat; good and poor conductors. 12. Radiation of heat. 13. Specific heat. 14. Nature of heat.

VI. Light.

1. Luminous and non-luminous bodies. 2. Extension of light. 3. Sight. 4. Reflection of light. 5. Plain mirror. 6. Curved mirror. 7. Refraction of light. 8. Refraction of light through convex lenses. 9. Colored light. 10. Spectrum. 11. The rainbow. 12. Colors. 13. The eye and sight. 14. Optical instruments. 15. The nature of light.

VII. Magnetism.

1. Magetic phenomena. 2. Relation of two magnets to each other. 3. Magnetic extension. 4. Manufacture of magnets. 5. Compass.

VIII. Electricity.

1. Electric phenomena. 2. Conductor and non-conductor of electricity. 3. Opposite electricity. 4. Distribution of Electricity. 5. Electrophorus and Leyden jars. 6. The electrical machine. 7. Tempest. 8. Galvanism. 9. Galvanic battery. 10. Electro-magnetism. 11. Telegraph.

Methods of teaching Physics.

Two characteristics of the teaching of physics in the elementary schools are noticeable: 1st, Directing of attention to simple and important facts by the aid of questions; 2d, Practical character of explanations and applications of simple laws. The use of objects — simple, home-made appliances — and charts and blackboard is universal. Perhaps the use of the last-named aid is the most noticeable, frequently being used as a test of the pupil's knowledge as well as a means of teaching.

The following notes illustrate some methods in general use.[1]

Second Class. — Seventh Year in School.

Lesson on the Pump.

Apparatus: A dish of water, a goblet, and a ready-made glass pump — valves, etc., visible. The parts are first described and their action explained. Answers to the following questions are given by individual pupils by show of hands: —

If I press this piston down, what will be the result? Why does the upper valve rise? Now, as I draw up the piston, what will happen? How many think that the lower valve will open? What will cause it to open?

[1] For model lesson in physics, see page 201.

What else will happen? What will cause the water to rise? Where will the water go? Let us see (teacher presses down and raises the piston slowly). Now, if I press the piston down again, what will be the result? Why does the upper valve close? Some of the pupils from their answers do not seem to understand, and the teacher uses the blackboard, reviewing step by step the movements and results.

Second Class. — Apparatus: A water-tight box with tubes of various materials. The following questions are asked, and if a satisfactory answer is not given, repeated in other forms: —

Lesson on Heat.

These tubes are of different materials: what are they? If I fill the tubes with hot water, what will you expect to find in feeling of them? Will all feel warm? Why? Will all the materials be conductors of heat? Which will be the best conductor of heat? (Difference of opinion on this point. Some think that the tube which feels the warmest will be the best conductor. Others think that the tube which feels the warmest first will be the best conductor. Tubes are filled with water, and all agree with the latter opinion.)

Which of all these materials is the best conductor of heat? Which is the poorest? What kinds of cloth are poor conductors of heat? What kinds are better? What kinds should be worn in summer? What kinds in winter? Why? What influence has heat upon water? Upon the air? Uses of this knowledge?

CHAPTER VIII

READING

Reading-Books.

THE reading-books of Germany throw much light upon the progress which has been made in teaching reading, and they also show the various kinds of opinions now held as to the proper method of teaching reading to beginners.

In the oldest reading-books — similar, perhaps, to the horn-books first used in this country — the letters of the alphabet were printed in order. At the end of the book were the catechism, Lord's Prayer, and other prayers, and finally the multiplication table. On account of the too great cost of these books, rude charts with the letters printed in large type were placed before the children and used instead. At the end of the seventeenth century illustrations were first used in the A B C books. These were probably suggested by Commenius's *Orbis pictus*, which first appeared in 1657. At about this time rhymes under the pictures began to be made. The rhymes seem to indicate the purpose of making the process of learning to read less tedious than it had been, and also of assisting the memory in learning simple facts about animals. Later, or in the

beginning of the present century, appeared books in which the pure phonic method was presented. A few years later — 1817 — appeared the first book in which script was placed before the printed forms ; and it was not until 1841 that the first German book was published which presented the present widely prevalent word and sentence method.[1] Books now in use generally introduce the word before its elements, although there are some books used which present first the elements for sounding and subsequently the words.

From the beginning, the contents of reading-books have been of an instructive character. The material of the first reading-books was chiefly of a religious nature — Bible history, Lord's Prayer, catechism, etc. At present, instructive lessons upon plants, animals, and minerals abound in reading-books of the lower grades, and books of all grades are filled with selections intended to awaken moral, patriotic, and religious sentiments. Poetry also abounds in all the reading-books, even in those designed for beginners. In one First Reader I noticed that all the pieces were of an instructive nature. The following are the titles of a few of the first pieces : *The School, The House and Yard, The Church, The Churchyard, The Market, Water, The Little Brook, Bread, Potatoes, Meat, The Garden, The House, The Cow.* In all of these pieces

[1] These facts are gathered from Kehrein's *Handbuch der Erziehung und des Unterrichts, bearbeitet von Dr. A. Keller*, p. 311–313.

simple descriptions of familiar objects and actions are given, together with moral admonitions and poetical sentiments. About one-third of the pieces are poetry selected from good authors. There are but few pictures in this reader, and those not very good.

In a third reader of two hundred and eighteen pages, I counted three hundred and eight pieces, all of which were designed to give instruction concerning facts of nature. Some were written in the form of stories and fables, and others in simple direct descriptions. There are a few crude pictures scattered through the book.

The contents of another book extensively used in the highest classes of the people's schools I found divided into nine parts as follows : —

1. Poems having a spiritual signification.
2. Adages and proverbs.
3. Fables, parables, and stories in prose.
4. Poetical fables, fairy tales, stories, and legends.
5. Miscellaneous pieces.
6. Poems of nature and of the fatherland.
7. Patriotic pieces.
8. Concerning natural history and geography.
9. Works of native poets in order, from the time of the Reformation to the present time.
10. Poetry selected from the most celebrated poets.

Most of the articles were written by classic authors, and every one of them seems to have been selected to

serve a distinct educational purpose. This standard, which may be said to be a general one in German reading-books, of having only models of literary excellence and instructive lessons, is much higher than that of many of our reading-books which are far from being classical or instructive. In some respects, however, — in binding, printing, and illustrations, — our reading-books, especially for the lower grades, are far superior to those of Germany. In respect to quantity of reading matter, many of our schools are far better equipped than any schools which I visited abroad. There few schools have more than one reading-book during a year, and in some schools one book has to last two years.

The reading-frame (*Lesemaschine*), although not so much used as formerly, is seen in many schoolrooms of the first grade. It is so constructed that words may be made by slight changes. The frame is regarded as especially useful in schools where the normal word method[1] is taught, — the normal words being allowed to remain for some time before the children. In some schools I saw a particularly good device for changing the letters of words. It was a frame with a double thickness of boards, constructed in such a way as to allow the insertion of slides vertically and laterally. The vertical slides had single letters upon them; the others, combinations of

Reading-frames.

[1] Described on page 103.

letters. Thus the words *cat*, *can*, *cab*, etc., could be easily and quickly formed.

Classification for Reading.

Occasionally I found a school of the lowest grade divided into two or more sections, one section reading while the others were employed with slate and pencil. Generally, however, all pupils of the graded schools were found reciting together. In ungraded schools the practice of classification for reading varies considerably. Some schools of this kind which I visited were divided into three sections — primary, middle, and advanced. Many ungraded schools are divided into two sections, the older pupils attending school forenoons, and the younger pupils afternoons. In such schools all the pupils are heard together in reading, following a programme which will be found in another place.[1]

Methods of teaching Reading to Beginners.

From what I have said of the character of the first readers at present in use in Germany, it may be inferred that all methods except the Alphabet method are used in teaching reading to beginners; and such is the fact, although the greater number seem to favor the word-script method. Much is made by all teachers of vocal drill exercises, the object being twofold: distinct articulation and facility in recognizing new words from their elements. Much repetition in this, as in other subjects, is noticeable. Frequently the teacher spends an entire recita-

[1] Page 72.

tion period of fifty minutes upon a few lines, which are read over and over again, seemingly for the sake of enunciation only.

The first recitation which I heard in Germany was of this character, and, as it was very different from what I expected to hear in a German school, it made a great impression upon me.

Illustrations of Lessons heard.

It was a school of forty little girls who had been in school but a few months. The teacher was a large man with a heavy voice, and his manner was somewhat harsh, quite in contrast to the gentleness which I had been accustomed to see in primary teachers at home. The first thirty minutes of the recitation were spent upon six lines which had been previously taught and read. The pupils were first asked to read the piece together, which they did very slowly, each syllable being pronounced separately and very emphatically. No attempt to secure natural expression was made. Again and again were the lines repeated, the teacher saying before each repetition, "Once more, and very distinct." After this the pupils were called upon to read two or three lines apiece, which they read somewhat more connectedly than they had read in concert, but still with little or no expression. Some of the words were then pronounced and talked about by the children, and little original sentences containing the words were given. The piece was again read over by the children in concert, this

Example of a Poor Method.

time with a nearer approach to good expression. The new lesson of a few lines was then read over very distinctly by the teacher, after which the pupils were asked to take their slates for writing. Pupils wrote upon the slates the review lesson in reading, which the teacher said would be written in blank-books the next day. During the reading I noticed considerable inattention on the part of pupils. The teacher stood during the recitation with no book in his hand, occasionally hissing when the children became too noisy, and speaking sharply to a child now and then for inattention.

But not many lessons which I heard were of this kind. I soon found that, generally speaking, the teacher even of the lowest grade had an intelligent purpose in his work, and a philosophical plan of carrying that purpose into effect. Indeed, the teacher whose work I have just noted proceeded after a definite plan. The only doubt was as to the wisdom of his purpose and plan.

Phonic Method.

The following extracts from my note-book will illustrate the phonic method, which is sometimes employed in the beginning and sometimes after several words as wholes have been taught. Teacher writes in large letters the following, in German script (Latin letters are not generally used until the second year) : *m, l, r, f, h, fl, fr, a, ä, au, ei.* As review, these are sounded by the children in concert, each three

times. Several repetitions of this exercise are made, after which the same sounds are combined with others in making words. For example, the teacher sounds *au-s*, *au-f*, and the pupils pronounce the words which the sounds make, *aus*, *auf*. This is done by individual pupils with a great variety of short words. The teacher questions pupils to bring out certain words, thus: What do you do with your hands? Pupils answer, Rub (reib). The teacher then points to the signs in their order, *r-ei-b*, writing the word upon the board. The same is done with words which have been taught orally. The answers are given by the pupils all together and individually. The reading of sentences is begun when several words have been learned in this way. "Spelling by sound" is practised only during the first year. Letters are first named in the second year.

In many schools I found a method of teaching reading known as the analytic-synthetic method, or as the normal word method. Twenty or more short words are carefully selected to be taught in regular order; first as wholes, afterwards in parts. The sounds and signs thus learned are then put together to make new words. The advocates of this method do not agree among themselves in respect to the words to be used, or to the priority of script, or to the time spent upon each word. Some teachers spend much time in talking about the object represented by

Normal Word Method.

the word; others use the word simply for reading and writing. The extreme course is shown by teachers who spend three or four recitation hours upon a single word. Thus *bed* is talked about (a toy bed being shown the children) for two hours, concerning its use, its parts, uses of each part, how it is made, habits of children in sleeping, etc. The talking is carried on wholly by questions and answers, the answers being in entire sentences. Then the teacher draws a picture of the bed on the blackboard, talking as he draws. The next step is to sound the word slowly and carefully until each sound is learned. The teacher then writes the word on the blackboard, and talks about each part. The pupils copy the word several times upon the slate, after which they "read" the word and designate each sign, carefully giving its proper sound. The last lesson upon the word consists in learning an appropriate piece of poetry and in singing. Not all the advocates of this method spend so much time upon any word, and some have the word written before it is analyzed. But all use the sounds and signs thus learned for the formation of other words.

The number of normal words thus taught before reading is begun varies considerably. The least number of words in the charts and books in use is sixteen and the greatest is one hundred.

The word and sentence method is used quite generally, but nowhere abroad have I seen it carried out so

well, or with as good results, as it is in our best schools. In many schools where this method is employed good expression is not insisted upon until the sentence has been read many times. A practice quite general with teachers of lower grades is to give object lessons upon the subject to be read in order to familiarize the pupils in the use of new words, and in the subject matter. An illustration of this method will be seen in the following notes taken in a first-year's class of a people's school in Leipsic.

Word and Sentence Method.

As I enter the room there are various fruits upon the teacher's table, and pictures of others hanging upon the wall. The teacher asks many questions like the following, the pupils answering in entire sentences: How is this fruit used? What is this drop called? (squeezing the grape.) Of what use is the grape? What must fruits and berries be to be of use? (ripe.) What kind should we not eat? I have told you a story about poison berries. Who can tell the story? It will be observed that the teacher's object in this object-lesson and questioning is to lead the pupils to understand the thoughts expressed in the reading-lesson, and to give the words and expressions which they are subsequently to read. The children read with good expression and fluency. I notice that their articulation is good, particularly of *t*'s, *s*'s, and *p*'s. When a word is not readily given in the reading, the pupil is allowed to pause a moment, seeming to sound

the word to himself, when it is pronounced correctly. A second reading shows little or no hesitation in calling the words. Silent reading, as a preparation for oral reading, is not practised in any part of the recitation.

Reading: Mechanical, Analytical, and Æsthetical.

A German teacher and author has divided reading into three parts, — mechanical, analytical, and æsthetic; and no one of these features of reading is likely to be neglected by the average teacher in Germany. In the first year or two the mechanical feature is particularly emphasized, — more, I think, than in our best schools, — especially in respect to phonics and articulation. Afterward, the analytical and æsthetic features receive most attention; and in these respects, I think, we may learn much from our German friends. As I shall attempt to show later, the analysis of standard poetry and prose in elementary schools is carried on to a remarkable degree. I have heard brought out by pupils of the middle grades fine shades of meaning which we rarely find in our high schools. It may be that we are underrating the analytical powers of our children. In our zeal to have them read much we may forget what they read for.

Time given to Reading.

The American visitor to German schools is struck not only with the limited extent of the reading in them, but also with the limited time of the recitation period given to *reading*. I have frequently heard but half a dozen pupils of a class of

forty read during a period of fifty minutes. The rest of the time would be given to discussion by pupils and teacher of the meaning of words and expressions, and of subjects connected with the reading. As has been said, the reading-books are made up of pieces calculated to awaken moral, poetic, and patriotic sentiments, and the efforts of teachers are wisely directed to the same ends.

Patriotism in the Reading-class.

I shall never forget the intense interest awakened in one school by a teacher's description of the last events of the Franco-German War, suggested by a piece of poetry which was being read. The teacher walked up and down before the class, wildly gesticulating, while the boys listened with breathless interest. Occasional questions were asked which could have but one answer — mainly in respect to the cowardice and incapacity of the French soldiers. To efforts like this, repeated in schools of every kind and grade, is due, to great extent, the strong spirit of patriotism which pervades the new empire.

History in Connection with Reading.

I was frequently struck with the great amount of supplementary work done in connection with the reading recitation. I recall the interest which pupils of a seventh grade, in Eisenach, manifested in a patriotic poem. The substance was first given of that part of the poem which had been read the day before. The language of pupils

was correct and fluent. William I. and Frederick I. were spoken of, and the teacher drew from the pupils a parallelism between William I. and Barbarossa, especially in uniting the kingdom. A story of Barbarossa was then told, also a poem of the same repeated from memory by several pupils. History of the period just after the time of Barbarossa was given, and the knights and minstrels were talked about. This was called by the teacher the budding-time of the German national literature. Names of poets and writers of this period were given. The relation of minstrels to literature was spoken of, and their effect upon the people. Then followed the reading, the teacher reading first, and the pupils following singly and together. Interspersed in the reading were questions to bring out the meaning of various expressions. The exercise closed with a comparison of the poem with another which had been read.

Study of Literature.

Works of classical writers, especially of Goethe and Schiller, are very thoroughly read in the higher grades even of the people's schools.

I recall a school in Leipsic of eighth-year pupils, who showed a somewhat remarkable knowledge of German literature. The pupils repeated from memory several of Goethe's poems, and told the story of Hermann and Dorothea, which they had read. They also gave a sketch of Goethe's life. The same pupils told who the leading writers of a certain period were, and, at the

request of the teacher, repeated from memory a few lines from each of several poems. Of course this was an exhibition exercise, given for my benefit. But it was an exhibition of which boys and girls of fourteen years of age might well be proud.

I have spoken of the remarkable reading and understanding of poetry shown by pupils of the lower grades. The work of the higher grades in this regard is no less remarkable.

As an example of the practice of teachers in preparing pupils for reading, and in awakening their thought and interest, I copy the following notes in full of a visit I made to a girls' school in Eisenach. The pupils had been in school four and two-thirds years, and were about eleven years of age.

Method in awakening Thought and Interest.

The piece for reading is "The Diver," by Schiller, and the teacher says they are about to read of a man who, at the request of the king, jumped into the Charybdis after a golden cup. Then follows rapid questioning of pupils, such as: What is the Charybdis? Why dangerous? What other whirlpool near by? Where was it supposed to be? To what sea does the Strait of Messina belong? The map is used freely, and points which the pupils do not know are told them by the teacher.

The teacher then speaks of the peculiar and dangerous fish in those waters, and shows pictures of them

upon a chart. Names and characteristics of all given. Occasionally pupils allowed to answer in concert, especially difficult names. At this point the teacher asks the pupils to repeat all that has been given.

The teacher then tells the story of the Diver, beginning with some imaginary references to the king, his journey from Palermo to the sea, and the purposes of it. Occasionally, to keep the interest of the pupils, he asks questions like the following: What would the king be likely to carry on such a journey? What do you suppose prompted the king to throw the cup into the whirlpool? Would the knights like to do the king's bidding? Why? Why did they hesitate? Why did the youth volunteer to go after the cup? As the story proceeds, headings are placed upon the blackboard, the teacher asking the pupils to decide what the headings should be. At certain points, as before, the pupils are called upon to repeat what has been said.

The reading of the piece follows, the pupils criticising each one as she reads. Animated expression and clear enunciation are the special features of the reading. Questions are asked by the teacher to bring out the thought expressed and to hold the attention. Frequently the answers are expected to be in the words of the poem. At other times answers in entire sentences in the pupils' own words are given. A few of the rhetorical beauties of the poem are pointed out. When

the reading is not expressive or fluent enough, the pupil is asked to read silently. Two or three lines are occasionally read in concert. There is no interruption of a pupil while reading.

The same class at the next reading recitation continued the same subject as follows: The girls asked to repeat the substance of the poem as far as it has been read. Questions asked upon advance lesson which require pupils to look in the book. Answers to questions given in words of the book. Sometimes the answers are given in words of the pupils after silent reading. Oral reading of a portion follows. Much attention given to enunciation and expression. Some concert reading. Questions follow the reading, to bring out the pupils' understanding of certain expressions. The same course is taken with another portion; viz., —

1. Questions to induce thought.
2. Pupils read silently.
3. Pupils explain, telling the substance of what has been read silently.
4. Oral reading, attention to expression, and enunciation.
5. Questions upon contents of portion read, and also upon rhetorical features.

One more portion treated in the same way, and then entire poem read.

From thought to expression seemed to be the motto of the teacher in this exercise — by no means an exceptional instance of a faithful application of the principle.

Occasionally, however, I saw an attempt to reverse the process: as when a teacher in one of the Berlin schools read with pronounced expression a poem, following the reading of each line with an explanation or paraphrase of it. The pupils were then asked to repeat precisely what he had said, and when the piece had been gone through in that way the pupils were asked to read and explain the whole.

From Expression to Thought.

The possibility of being deceived in an inspection of results simply is shown in this case. If I had not seen the method of the teacher, I might have judged the work of his pupils to be as good as that which I had seen in the Eisenach school. The difference, however, was world-wide. One teacher led his pupils into habits of thoughtful attention to nice shades of meaning, and developed in them a love of the best literature. The other cultivated one faculty alone, that of the memory, and led his pupils, in the most effective way, to dislike good literature.

From what has been said it will be seen that the teacher of reading from the very lowest grade has clearly in mind the end of cultivating the taste of the children. Not how much, but how well, is the constant motto of the school in read-

Cultivation of Taste.

ing; and the teacher, in most cases, is careful to see that the good quality demanded is not confined to expression, but that as much of the author's thought be understood as the pupils are capable of understanding. The school library found in many of the elementary schools admirably supplements the work of the classroom in enabling the teacher to guide in a large degree the reading of the pupils out of school hours.

Much seems to be made of fables and fairy tales in the lowest grades. In schools taught according to principles laid down by Herbart as interpreted by Ziller, the reading during the first and second years consists wholly of fairy tales. At various times I heard parts of lessons in these subjects, and was much impressed by the interest which the children manifested, and by the ingenious methods pursued by some teachers to secure good results.[1]

Fables and Fairy Tales.

[1] For methods employed in teaching fables in the first year see p. 192.

CHAPTER IX

LANGUAGE

LANGUAGE, or "German," as given in the course of studies, includes reading, writing, spelling, syllabication, punctuation, use of capitals, word building, derivations, memorizing of selections, composition, and grammar.

From what has been said of the teaching of the various subjects, it will be seen that in every recitation language is carefully taught. Language is, in all grades, evidently considered an expression of thought, and whenever there is a thought to be expressed, it is required to be put into the best possible form. Thus accuracy and fluency of expression are made as much ends of instruction as are the facts themselves. The effect of this kind of language teaching is especially noticeable in connection with the elementary object and science lessons. Here every fact observed is clothed in proper form, and all facts closely related are brought together in a series of connected statements.

Language in every Recitation.

One feature of the recitation peculiar to the German schools gives an especially good opportunity for language training. As has been said, the German text-

books contain much less matter than ours. What our text-books leave out, the German teacher supplies by word of mouth at the time of recitation. Several times during a recitation the teacher makes several statements in the way of information, and then asks the pupils to reproduce in substance what has been said. Thus pupils get accustomed to listening closely, and to expressing in good language what they have heard.

Again, pupils are constantly called to account for using ungrammatical or bungling sentences, and are made to repeat their language until it is satisfactory to the teacher. Besides being a means for excellent drill in spoken language, the work of the regular recitation furnishes a good basis for all written work.

Aside from books upon grammar, there are few language text-books used either by teachers or pupils, and in grammar the books for elementary schools are limited to important points. Three sets of blank-books are generally found in all of the elementary schools — one for penmanship, one for dictation exercises, and one for compositions. These books are regularly used each week, and in all the schools I visited the teacher marked with red ink the mistakes of every exercise. The rewriting of the corrected exercises is generally given for home work.

Text-books and Blank-books.

In examining the exercise books I was struck with the small number of mistakes made by the pupils and

noted by the teachers. This excellence of work was, I thought, due to the careful grading of the exercises, to frequency of reviews, and to the teacher's severity in the correction of mistakes carelessly made.

The following syllabus[1] outlining the work to be done in the partially graded (*Zweiklassige*) schools of Prussia show in compact form what is attempted in all departments of language study.

Syllabus of Work prescribed.

Correct oral and written expression of thoughts which enter into the life of the people and ability to read good literature with profit are the aims of language work. Special attention should be paid to ordinary business forms.

PRIMARY DEPARTMENT.

Lower Class (eleven hours). — Object method. The pupils are led to talk of objects within their line of vision. The powers of observation are trained by study of objects in their vicinity. School, playground, garden, field, forest, and home afford a great variety in the material for this instruction.

Enunciation and expression receive attention.

In teaching reading and writing, the method of the normal school of the district is to be followed. The alphabet method is strictly forbidden.

At the close of the first six months the pupils must be able to divide simple statements into words, the words into syllables, the syllables into their respective

[1] From the New York Report of the Superintendent of Public Instruction, 1891. Appendix, p. 166. Mr. Parsons's Report is republished by C. W. Bardeen, Syracuse, N.Y.

sounds. They must be able to make and name the letters representing these sounds.

At the close of the first six months the pupils learn the printed characters and the names of the letters of the alphabet.

From the outset, to prevent mechanical reading, children should be taught to associate words and, later, statements with the objects or ideas they represent.

Each selection read must be thoroughly understood by the pupils.

Simple proverbs, aphorisms, and short easy selections should be learned by heart and repeatedly reviewed.

In teaching writing the teacher should show upon the blackboard the formation of the letters.

Orthography is encouraged through careful attention to enunciation, attentive reading, copying, and dictation.

From the very beginning children in writing should be taught to use the proper punctuation.

At the close of the second school year the children should be able to read with facility and correctness the selections they have taken; to answer simple questions as to subject matter; to reproduce these selections orally; to copy correctly from the primer, and to write from memory the proverbs and sayings learned by heart. They should have had simple exercises in dictation.

Higher Class (eight hours). — In this class the reader for middle classes is used.

The instruction of the lower class is continued, with closer attention to subject matter and expression.

Pupils are led to reproduce orally selections read. At first they will confine themselves quite closely to the words of the book. The teacher, by judicious questioning, will force pupils to express themselves more or less in their own words.

Selections in prose and poetry are to be learned by heart.

Orthography is continued as in the lower class.

Special attention is now given to

1. The use of capital letters.
2. The shortening and lengthening of vowels.
3. The *Umlauting*.
4. Hard and soft consonants at the beginning of words and syllables.
5. The finding of final consonants through lengthening words.
6. The use of the letters *t, th, dt; f, v, ph, pf; x, chs, cks, gs, ts, z.*

In writing, the forms of the German script alphabet are now taught in regular order. The pupils learn the comparative size and position of letters, the proper distance between letters and between words. Time writing is then practised in concert.

The formation of the plural of nouns is taught. Statements are formed with personal pronouns and verbs in the present tense, and afterward in the past and future tenses. Adjectives are studied in the same way.

Word building, effect of affixing the syllables, *chen, lein, er,* and *in* to nouns; *ig, lich,* and *isch,* to adjectives; of prefixing the syllable *un* to adjectives.

ADVANCED DEPARTMENT.

Lower Class (eight hours). — The pupils read the more difficult selections of the middle-class reader. Correct expression and a thorough understanding of the subject matter are required. Pupils have now acquired the ability to reproduce selections from reader orally with facility, and to repeat readily that which has been learned by heart.

For practice in orthography the selections learned by heart are written from memory and corrected by book. Simple rules are learned.

Writing is continued as above. Pupils learn to compare adjectives and to form the indicative and impera-

tive modes of verbs. They are drilled in the declension of nouns with and without definite and indefinite articles. All the work should be practical, the pupils forming statements and simple sentences introducing the various forms of words desired. Sentences are transposed, and the subjunctive mode is introduced.

Word building is continued. Words not understood by the pupils are best defined by practical examples; i.e., the teacher forms sentences introducing such words.

The pupils learn the parts of a simple sentence.

The pupils reproduce in writing short stories by teacher, selections from the reader, etc.

Closer attention is given to form and style of oral expression. Composition receives attention. An effort is made to teach pupils to express themselves in writing correctly and clearly. At first the teacher places outlines upon the blackboard. Little by little these outlines disappear, and the pupils are led to depend more and more upon themselves, after teacher has explained orally the work required of them.

Higher Class (eight hours). — The reader for advanced classes is now studied. At least thirty selections are mastered yearly. The first step toward the proper understanding of a selection lies in reading same aloud faultlessly, and in speaking upon its subject matter. The greatest care must be given to correct expression.

Oral reproduction exercises are continued with greater strictness, the teacher ever requiring more and more of the pupils.

A number of poems, especially songs of the people, are learned by heart.

Before leaving school the pupils should be able to read understandingly the more difficult selections, which, in subject matter, are not too far above them. They should be able to express clearly and correctly the subject matter of such selections.

Reading and the other language exercises should enable the pupils to spell and punctuate correctly. Should the same faults often occur, the teacher must

devote special attention thereto. Words alike in sound and foreign words in common use demand special drill.

In penmanship the German and Latin scripts are practised at stated hours. Proverbs and sayings of the people serve as copies.

Pupils must learn to write neatly and legibly.

The different forms of sentences are studied with reference to punctuation; parts of speech; the formation and use of participles; the declension of adjectives with and without definite and indefinite articles; the declension of pronouns; prepositions and their uses; government of verbs and adjectives; conjugation of verbs; analysis of sentences; direct and indirect discourse; word building.

All the work is introduced and practised with practical examples.

In composition the reproduction exercises are continued, and short themes are written on familiar subjects. Pupils are often asked, at the close of a lesson in natural history, geography, the history of the Fatherland and religion, to write what they have learned.

Careful attention is paid to ordinary business forms, letters, bills, notes, receipts, etc. Letters are prepared ready to post.

All written work should be done neatly.

Writing.

The penmanship of the pupils of all grades and schools is uniformly good, — far better on the average than our schools can show. As has been said, writing and reading in the first grade frequently go on together, practice in writing words and sentences following closely an understanding of them in reading.

Custom varies as to the time of beginning the use of ink in writing. Most frequently, I judge, the use of pen and ink is begun sometime during the first year, at times as early as the third month. **Use of Pen and Ink.**

Books with "copies" or models are rarely seen, blank-books being used instead. The proper forms of letters are taught from small charts and from the blackboard. Great care is taken to have every page of the blank writing-book neatly kept, and all of the other writing is always most carefully done. I do not remember to have seen a single language exercise-book carelessly written. Many teachers make a practice of examining and marking each page of the writing-book when it is completed. **Blank writing-books.**

The German letters are written at the beginning of the course, and practice upon them is continued from two to four years, when both German and Latin script forms are used. **Use of German Script.**

In early practice the small letters are given first, and are taught in the order of their complexity. Great care is taken with this letter drill-work, it being continued until well-formed letters are made. Movement exercises also are given in the lower grades. Various plans of conducting such exercises are pursued. Sometimes the writing of letters and words is accompanied by counting, and sometimes by describing each stroke of the pen, — as "upward," "downward," etc. **Early practice.**

The method of teaching movements, as well as other points in connection with writing, is shown in the following brief record of a visit in a first grade (first year) school in Berlin.

The teacher talks for some time about a band of music so as to draw out from the pupils the word *drum* (*Pauke*). There is also shown a picture of a drum on the blackboard. The teacher then writes on the blackboard in German script the word thus taught. (The two kinds of script are not used until the second or third year.) The letters are made large and very slowly. As she writes (this teacher is a lady, and the pupils are girls), she describes each movement thus: "Little hill, rounded turn, light upward, point, deep downward, rounded turn, light upward, open little egg, enclose, heavy downward, light upward, heavy downward, high up, heavy downward, long little egg," etc.

The teacher then asks the children to write in the air the same words, and say what she has said as they write. This they do singly and together. The words describing the movements are very pretty and musical; thus, the above directions are: "Kleiner Berg, umgebogen, fein hinauf, Spitze, tief herunter, umgebogen, fein hinauf, ofnes Eichen, hägen, stark herunter, fein hinauf, stark herunter, hoh hinauf, stark herunter, langes Eichen."

Teacher asks, How many syllables has this word? What is the first syllable? What is the second sylla-

ble? Answers are given by pupils singly and in concert; the pupils clap hands as they repeat the syllables. What is the first sound? What is the second sound? Third? Last? Now take slates and write this word very slowly and carefully. One pupil at a time repeats the directions above given; the rest write together. This seems to insure slowness. Teacher examines slates, stopping and assisting those who fail to do the work to suit her.

Shading is taught early in the course, and is sometimes practised in connection with movement exercises, emphasis being placed upon the words of direction which denote the shaded lines. Thus, in a school where ink had been used by the pupils but two weeks, I heard the following exercise: —

The teacher writes in large letters upon the blackboard the word *that* (*das*). Pupils follow same movements in the air, emphasizing such words as indicate shaded lines, thus: —

Up (softly spoken).
Down " "
Up " "
Left " "
Half circle (spoken with emphasis).
Down " " "
Up (softly spoken).
Half circle (spoken with emphasis).

The teacher and pupils then work with the word *violet* (*Veilchen*) in the same way. The patterns are left upon the board; and pupils are asked to write the words first upon the slate, afterwards in the blank-books. Teacher sharply criticises each pupil who makes a mistake, and shows upon the blackboard wherein the letter is wrongly formed.

Not nearly so much time is given to writing, as such, in the higher grades as in the lower. Indeed, in many schools no special practice in writing is given beyond the fifth school year; the pupils being expected to retain the skill they acquired in the lower grades, and to gain facility in their subsequent dictation and composition work. In the latter work the writing is made an important feature, and in some schools all carelessly written work has to be re-written. One sees in the schools but little writing with the lead-pencil, and, as a rule, no careless copying and hasty taking of notes, which almost inevitably destroy the good effects of all previous instruction.

Dictation Exercises.

Much attention is given to dictation exercises in schools of all grades. In many schools one dictation exercise a week is given; the aim being to teach correctness in spelling, syllabication, punctuation, and use of capitals. The exercises are carefully adapted to the age and ability of the pupils, and consist of phrases and sentences with which the pupils are somewhat familiar.

The chief value of such exercises lies in their regularity, and in their methodical correction by the teacher. The plan generally pursued is to give to the pupils a few words at a time for them to write and punctuate as well as they can. The mistakes are marked with red ink by the teacher, and the whole exercise is then re-written carefully in the dictation exercise book. This work is continued once a week through the greater part of the course.

There are few special lessons in spelling heard in any of the grades ; such lessons are not greatly needed, owing to the phonetic character of the language. What little training the pupils get in spelling is had in the dictation language lessons, and in the "word" lessons, in which homonyms, synonyms, and derivations are studied.

Spelling and Derivations.

In one school which I visited — fifth-year grade — the teacher had a list of difficult words, and asked concerning each word, How shall it be written? The pupils answered by giving the difficult part only, thus saving much time. In each case, however, the pupil would repeat the word very distinctly, separating it into syllables slowly ; e.g., *Ver-wöh-nen, Rho-ne.*

In derivations very interesting work is done in the higher grades, — sometimes as early as the fourth year, by leading the pupils to collect a number of words having the same root; also by having them learn the force of prefixes and suffixes. In all such work the art

of drawing from the pupils the principal facts is admirably shown.

In a first class of a Berlin people's school I saw books in the hands of pupils in which they had written a great number of words, their component parts, and the meaning of each part. In some cases where the common meaning of the word could not be directly traced, reasons for the changed form were given.

Recitations from Memory.

In all grades of the people's schools the reciting from memory of choice selections of poetry and prose is a common practice. The selections are generally taken from the German classics, even in the lowest grades of schools. Much concert recitation of these selections is noticeable, especially in the lower grades. The teachers, as a rule, make a great point of teaching the selection thoroughly before it is committed to memory. This is done by graphic explanations and by questions designed to draw out the pupils' thought. From what I could learn, I judge that declamation is not much practised in any of the schools.

Original Compositions.

In all the upper grades original compositions are written frequently and regularly in books designed for the purpose. The subject matter of the compositions is generally drawn from the regular studies, — geography, history, and elementary science. Preparation for the written work is thus made in the regular recitations, the only added features

being the mechanical part connected with writing and the binding together of the various parts of a subject to make a connected whole. In subjects connected with elementary science, drawings in illustration of descriptions are frequently found.

As to the amount of original composition work done, custom seems to vary; but in no school of the upper grades did I see less than one composition a week written carefully, after correction of a first draught, in a composition book. Some courses of study distinctly state that one composition a week shall be the *minimum*, adding that the teacher is to correct carefully the composition, which is to be re-written in an exercise book. The corrected copy is to be "looked through," and both copies are to be preserved.

Perhaps I can explain the methods employed in teaching composition in no better way than to present an abstract of a few simple rules which are given as a guide to teachers.[1]

1. See that the pupils have clear ideas of the subjects to be treated. The simple compositions are the most instructive.
2. The material should be of every possible kind, including what is observed, told, and read.
3. "Practice makes the master." Short original compositions should be called for frequently.
4. The pupil's thought as well as expression should be as original as possible.
5. Simplicity is a proof of clearness of ideas.

[1] Leutz's *Lehrbuch*, II. Teil p. 339.

6. There should be progressive steps from the simple to the complex. Therefore the teacher should have a definite plan laid out for the year.

Technical Grammar.

There seems to be a great difference of opinion respecting the amount of technical grammar to be taught in elementary schools and the time at which it should be begun. So far as I could learn, the prevailing custom was to have more technical grammar than we have in our grammar schools and to begin the subject earlier in the course. In many schools of the fourth grade or year, and even in some of the third grade, I found the parts of speech, subject and predicate, and kinds of sentences taught.

In high schools the subject of grammar is taught with greater thoroughness and strictness than in the people's schools.

In many people's schools the following principles are made the basis of work in grammar : —

1. Grammar should not be pursued as a separate subject, but always in connection with spoken and written language work.

2. Grammar should be pursued in the people's schools only so far as it is necessary to a correct understanding and use of language.

Although there are in some schools little text-books containing the various declensions and conjugations, and the simpler rules of construction, most of the teachers seem to prefer teaching grammar orally in

connection with the reading-book. The course of studies in Saxony states that "the reading-book is to be used as the text-book for teaching grammar, although the use of an outline book by pupils is allowed." Yet the teachers working under this course are reminded that the "central point of all grammatical instruction is the reading-book."

Considerable emphasis is placed upon analysis of sentences, which is begun early in the course. In one school of the third grade (third year) I found the following work done: —

Teacher places upon the blackboard the sentence, "*The scholar works*," and asks the following questions: What is the subject? Why? (Generally the predicate is the first part of the sentence called for.) What is "*the*"? Name the definite articles. Decline "*the scholar*." Name the indefinite articles.

The teacher then writes another sentence, "*The rose is red*," and asks, What is the subject? Why? What is the predicate? Why? "*Red*" is called the predicate, and pupils are taught to say that it is the predicate, because it answers the question *How* is the rose? Pupils also say that an adjective is the predicate when it answers the question What kind? (*Was für?*)

Again the teacher places upon the blackboard the sentence, "*The tree is a plant*," and asks similar questions, drawing from the pupils the statement, The predicate may consist of a verb, adjective, or noun.

When questioned as to whether this work was not too difficult for pupils of the third grade, the teacher said he thought not, when not pushed too far. The subject, he said, should be treated simply and taken in connection with the reading-lesson.

In the higher classes I noticed that the examples for study were all quotations from celebrated authors, and that in these examples the pupils would indicate where the punctuation marks were. Rules of construction and of punctuation were constantly required from the pupils.

The grammatical forms in the German language are so much more complex than in the English that it is difficult to show exactly the kind of work that is done, but the following exercise will illustrate a principle which is quite generally followed in teaching grammar; viz., to deduce rules and principles, and to learn grammatical forms from many examples.

The teacher places upon the blackboard the sentences:

1. The man fights. The men fight.

2. The arm of the man is strong. The arms of the men are strong.

3. To the brave man honor is due. To the brave men honor is due.

4. Arms adorn the man. Arms adorn the men.

With these sentences before them, the pupils are called upon to distinguish singular and plural forms in respect to the endings of nouns and the articles.

Afterward, the endings of the four cases are noted, the different relations being shown by the questions, *Who? Whose? To whom? Whom?* Similar sentences are placed before the pupils and the same points are reviewed, until the articles and endings of the two numbers and four cases are well known. Practice in supplying correct forms in elliptical sentences follows. This form of the application of principles and rules seems to be much more commonly used than the correction of incorrect sentences.

I noticed in some schools of the lower grades, pupils were led to use the terms, "object-word," "action-word," "relation-word," and even for the four cases to say "who-case," "Whose-case," "to-whom-case," and "whom-case."

CHAPTER X

GEOGRAPHY AND HISTORY

Course of Studies.

In Saxony and other parts of Germany, the course in Geography provides that "home knowledge" (*Heimatskunde*) be given during the third and fourth school years, it being understood that by "home" is meant the city or town in which the pupils live and its surroundings. The Prussian course includes the government district and province as material for study during the third and fourth years.

The following detailed course[1] for the last half of the third year in Baden shows the character of the work demanded before distant regions are taken up. The first part is evidently a review of what has been previously observed.

Conversations upon the town and vicinity. Observation lessons: measuring (by steps) and descriptions of the schoolroom, the schoolhouse, and yard according to directions (by the sun); observation and description of the nearest surroundings of the schoolhouse, streets, and most important buildings, squares, etc.

Drawing of objects that have been observed. The plans are first drawn, with reference to directions, and approximate distances, upon a blackboard laid horizontally.

[1] Leutz's *Lehrbuch*, II. Teil, p. 224.

Consideration of a plan of the schoolhouse and vicinity. Conversations upon the inhabitants of the town — the number of people and of families, the difference in sex, age, occupations, authority, etc., all being connected with ethical instruction. After attention has been given to the town, instruction by observation and descriptions should be extended to the neighborhood. For this purpose visits to the neighboring forests, meadows, and fields should be made — highlands and valleys, ponds and streams of water, should be observed with constant reference to direction, distance, etc. In these observations essential geographical ideas are developed as of horizon, hill, mountain, mountain chain, valley, mountain peak, slopes, foot of the mountain, plain, brook, river, spring, banks, bed, mouth, branches, island, peninsula, lake, sea, bay, etc.

Then follow directions for drawing the places which have been observed.

A large share of the last four years of the course is expected to be given to the pupils' state and Germany. Nearly all of this study, as well as that of foreign countries, is of the physical and political features.

Not much time is allowed for the study of mathematical geography. The course of Saxony provides that it be taught not as a separate subject, but in connection with physical and political geography. It states further that only the most important parts of the subject shall be taught, such as the shape, size, and movements of the earth, its relations to the sun and moon, and the phenomena attending these relations. In the Prussian course the following subjects connected

with mathematical geography are recommended to be taught in the advanced grades: —

1. The Horizon. 2. Representations of points and lines. 3. Shape of the earth. 4. Motions of the earth. 5. Seasons and zones. 6. Fixed stars. 7. Sun and moon. 8. Calendar.

Text-books in geography generally have no maps, and consist of bare outlines of essential facts. The teacher is supposed to give in the recitation all details of information, or lead the pupils to infer them. Indeed, in several schools which I visited, no books for study were in the hands of pupils. In such schools the topics were developed in the recitation, and copied into blank-books.

Books and Apparatus.

An atlas is in the hands of pupils in all grades beyond the third. The maps in the atlases are invariably good, representing the general features of all important countries, and all features of Germany in great detail. Graphic representations by colors, and outlines of comparative areas, and zones having the same climate, vegetation, and rainfall, abound in all of the higher grade atlases, and to some extent in the atlases used by elementary school pupils.

All grades and kinds of schools are very fully supplied with geographical apparatus. Maps, charts, and pictures of various kinds are found in the apparatus room connected with all graded schools, while the globe and blackboard, ready for use, are found in all

class-rooms. The maps are nearly all of two kinds, — one kind to represent the political features of a country or section, and another kind to represent the physical features. The relief maps do not seem to be widely used for any other purpose than to represent land elevations and slopes.

Raised maps are not in general use. Some of the best which I saw were made of pasteboard by the pupils and teacher.

In the teaching of races, occupations, manners and customs, productions, etc., constant use of pictures is made. Nearly every school is well supplied with large charts, from two to four feet long, illustrating a great variety of subjects; such as important cities, mountain and lake scenery, occupations of the people in different countries, etc. Many of these pictures are beautifully colored, and all are good representations of what they are intended to teach.

Use of Pictures.

In comparison with corresponding schools in America, the German schools are far more thorough in what is called home geography, while in a knowledge of foreign countries our children would seem to have the advantage. By home geography I mean more than what is done in the lower grades as preparation for subsequent study. That is done in the German schools as thoroughly as in our best schools, while the minute study of the country and neighborhood in higher grades in respect to surface, drainage,

Home Geography.

soil, productions, occupations, etc., is pursued to a degree quite unknown in our schools. School excursions for the purpose of observation are made by schools of all grades, and vary in extent, from those which are made after school in the afternoon to those which are made by cars and on foot into the country, and which take several days to complete. On several occasions I heard teachers ask pupils what had been noticed during such excursions, the object being to impress by review the facts observed, and to arrange them in logical order. It should be mentioned that facilities for making long excursions are easier in Germany than in America, and that they can be much more cheaply made. For a few cents apiece a school can be transported in third and fourth class cars twenty or thirty miles into the country, and by special arrangements at country inns for sleeping, the pupils can, with the aid of a knapsack of bread and sausage, live for several days at an expense but little in advance of the cost of living at home.

Plan Drawing.

The drawing of plans in connection with home geography is universally carried on in the lower grades. Sometimes I found the plans, showing the progressive order of the work from the beginning, preserved in a blank-book. The most complete instance of this kind which I noted was in a fourth year class in Weimar. The pupils' books showed a series of plans most carefully drawn from

those of the schoolroom to elaborate maps of sections of country extending twenty miles from Weimar. These plans and maps were carefully drawn to scale, and the elevations noted in various ways. The method was to have the drawings placed upon the blackboard as the observations proceeded, and afterwards copied into the books.

In some schools I found moulding carried on with a good degree of success — even as late as the fifth year. I observed that in all cases the moulding was a representation of what had already been observed and talked about. The simplest devices are sometimes used. For example, in one school where the geography of a region of country twenty or thirty miles away had been carefully studied by the aid of maps, etc., there was constructed upon white paper a sand mould of the section, having creases for brooks and rivers, and strings for roads.

Clay Moulding.

It is safe to say that two-thirds of the time devoted to geography is given to the study of Germany.[1] The physical features of the country receive special attention, as shown in the following notes of two recitations, which I heard in the practice school connected with the university of Jena: —

Thorough Study of Germany.

I. Class. Fifth year in school.

Subject: Erz Mountain district.

[1] For model lesson in geography of a portion of Germany, see p. 195.

The pupils are called upon, first to repeat the substance of the previous lesson upon the upper Erz Mountain district, the topics being given by the teacher. The topics are: —

1. Climate.
2. Occupation of people.
   (*a*) Agriculture.
   (*b*) Cattle raising.
   (*c*) Hand work.
3. Manners and customs of people.

Then follows the advance lesson, which is upon the lower Erz Mountain district. The map is before the class with a blackboard upon which the topics are placed as soon as they are developed.

The object to be reached is first given by the teacher, as, "We will first speak of the surface of this region." Then follow questions, bringing out ideas concerning the height and appearance of hills and mountains, compared with those of the upper district. The pupils answer in entire sentences. The second topic is climate, and inferences are made by the pupils from the character of the surface. Comparison and inferences like the following are made: "The surface of this region is lower than the upper district; mountains less high; less exposed; therefore there is less snow here, and the winters are shorter." When all the points of a topic are brought out by questions, they are repeated by the pupils without questions; the heads are placed

upon the blackboard. The teacher constantly gives facts or information which the pupils could not infer, such as the existence of forests, beauty of the meadows, etc.

I note the following good features of this lesson: —

1. The teacher has a definite plan and follows it.
2. Constant association of ideas.
3. Inferences by pupils from known causes.
4. Constant repetition.
5. Pupils led to express themselves fully and accurately.
6. Teacher has great patience with pupils; no haste.

Same class as above: next recitation.

Pupils first repeat substance of last recitation, — next say what the subject of the day's lesson is. The various topics to be discussed are also given by pupils, the teacher placing them upon the blackboard. Pupils infer, from what they have previously heard and seen, the occupations of the people of the district (working in factories). Samples of questions as follows: Why should there be so many factories here? Where would they be likely to be? (Pupils point on the map and tell.) What would they be likely to make here? Why woollen goods? How is this done. What is weaving? What else used here in manufacturing? What is made from flax? How? Any other articles used? Why? Why cheaper? Where is cotton obtained? What make the large towns? (Several large towns pointed

out on the map and noted on the blackboard.) What turns the wheels? When not water enough, what is used? How is the steam generated? What kind of fuel is used? Where found? Why so many factories exactly at this point? (pointing on the map.)

The teacher describes the process of mining the coal, occasionally interspersing the description with questions. From the situation of the country, he leads the pupils to infer a difference of climate and vegetation from those of the region studied in the previous recitation.

The topics are placed upon the blackboard, as before, and the recitation is concluded with a connected story by the pupils of all the facts learned.

Cause and Effect.

One of the good features of the above lessons, that of drawing inferences from known causes, is sometimes made very prominent in a recitation. Thus in studying productions and the occupations of the people scarcely a word is said by the teacher in the way of information, all the facts being drawn by inference from the pupils. Occasionally also the pupils are called upon to trace the causes of certain effects, as described in the following notes of a recitation heard in Dresden.

Subject: Leipsic and surrounding country. Each of the pupils has a progressive map, with ranges of mountains and hills and streams of water carefully outlined. The teacher draws from the pupils the fact

that Leipsic is a centre of trade, and leads them to tell the probable original cause of its being and continuing to be a centre. The pupils are asked to tell the location and condition of the people several years before, and to show what peculiar conditions of surface and streams probably helped to fix the location of the city where it is. The subsequent helps of railroads and the location of other cities are noted, and finally the present fairs are described, with all the different kinds of wares, brought to them from the various sections of Europe.

With so much time and attention given to the study of Germany, it is a matter of interest to note what features of foreign geography claim the attention of teachers during the comparatively short term allotted to it. It is noticed in the first place that only the important physical and political features are emphasized. These features are reviewed with such frequency as to insure thoroughness. Further it is discovered that those points of information which are of general interest receive special attention; and lastly, especially in the higher grades, features as effects in relation to causes are studied. Two examples of lessons heard in elementary people's schools may suffice to illustrate these points.

Study of Foreign Countries.

First Class. Subject: Africa. Large outline map on the wall in front. Open atlases before the pupils. First, review of physical and political features of the Continent by rapid questioning. The names and

location of a half dozen rivers, mountain ranges, and towns are called for, and some boundaries of political divisions. These are given by the pupils as if they had been the subject of review before. The advance is then taken, which is Southern Africa. The teacher talks rapidly and interestingly of the settlement, occupations of the people, wars, government, etc., occasionally asking a few questions. The recitation closes with the repetition by the pupils of all the teacher has told them. The teacher informs me that other important sections of Africa are to be treated in the same way.

Second Class. Subject: Asia.

First, review of general physical features. Then follows the advance upon Western Asia, indicated by the following questions, pupils being allowed to look at maps in answering the questions: What kind of vegetation here? What kind of grass? What does the desert look like? Where do the flowers grow? What kinds? What connection is there between the flower and the desert? What kind of people are found here? What can they do? What can they not do? What name is given to them? Compare the Aral and Caspian Seas. How alike? How different? (The teacher here gives information which is repeated by the pupils.) What progress has Russia made? What railroads have been built? What is carried upon them? What country near by is important on account of its political relations with the Russian possessions? What country

lies between? How has it suffered? What is the dispute? What was the cause? How long ago did it begin? (The teacher answers such questions as the pupils cannot answer, and tells many interesting things of the relations and desires of Russia and England.) Why does not Russia value highly the northern and eastern parts? Size and extent compared with Germany? Why unfruitful?

The recitation closes by a review of what has been learned of Western Asia, some facts of history concerning Alexander the Great which had been given them previously, or which had been read by them being brought in.

In most of the elementary schools the study of history is confined to the two upper classes, and in each year the entire range of history from the beginnings of German history to the present time is gone over. The advisability of limiting the subjects to be studied or of distinctly defining those subjects which ought to be known is shown in the Berlin course in history, which provides for the thorough study of thirty-one subjects in the last two years of the people's school course. These are as follows: —

Course in History.

1. The old Germans. 2. Wars of the Cimbrians and Teutons with the Romans. 3. Arminius. 4. Migrations of the people. Attila. 5. Charles the Great. 6. Henry I. 7. Otto I. 8. Henry IV. and Gregory. 9. The first crusade. 10. Frederick Barbarossa. 11. Rudolf of Habsburg. 12. The knights.

13. Inventions. 14. Discoveries. 15. Charles V. 16. The Thirty Years' War. 17. Fight of the Germans with the Lusatians. 18. Albrecht the Bear. 19. The Bavarians and the false Waldemar. 20. Frederick I. 21. Frederick II. 22. Joachim I. 23. Joachim II. 24. Johann Sigismund. 25. The great elector. 26. Frederick III. 27. Frederick William I. 28. Frederick and his heroes. 29. Frederick William II. 30. Frederick William III. with especial consideration of the War of Freedom and its heroes and statesmen. (Scharnhorst, Blücher, Gneisenau, York, Kleist, Bülow, Stein, and Hardenberg. 31. The Emperor William; the Danish, Austrian, and French wars and their most celebrated men.

There are now added the names of other persons and events which have become prominent since the date of issuing the above course — 1873.

Lecturing in the Recitation.

In the history recitation perhaps more than in the geography recitation, the teacher takes up much time in giving information connected with the lesson. He generally speaks with great animation, calling upon the pupils at short intervals to repeat the substance of what he has said.

Patriotism.

In all grades of schools the central point in the teaching of history is the Fatherland. Especially is this true in the people's schools, as shown in the general and specific courses of study. In the course for the Saxony people's schools it is stated that the chief purpose of the study of history is to lead the pupils to know the principal features of the development of the German people, and that the

study of the history of foreign countries is allowable in so far only as it has relation to Germany. In the Prussian course the object of the study is stated to be the development of a love of country and of a loyalty to the royal family. These directions are implicitly followed by teachers at every convenient opportunity. Whatever can be said of the greatness of Germany is told the children, especially whatever shows her prowess in war.

Great use is made of biography, especially of persons who have been instrumental in fostering the interests of the German people. The courses in history for the first year generally provide for learning about the lives of celebrated men. In the course above given[1] for example Nos. 1, 3, 5, 6, 7, 10, 11, 15, 16, and 20 are recommended for the work of the second class.

Biography.

The memorizing of dates is limited to the dates of the most important events. And those dates are constantly reviewed and referred to as points for comparison. In the Berlin course of study above referred to, the dates (generally only the year) of sixty-three events are to be learned in the second class, and of fifty-three more events in the first class, or about six new dates on the average every month. These dates, it will be remembered, extend over fifteen centuries, about half of them being included in the last two centuries.

Memorizing of Dates.

[1] Page 143.

One noticeable feature of the teaching of history is its connection in the recitation with geography, all places referred to being located by the aid of the map. My notes frequently refer to the fact that atlases or maps were used during the recitation, and that the crayon and blackboard were brought into frequent use in locating places and movements of armies in battle.

Geography in Connection with History.

Pictures prepared especially for teaching history are also in constant use. These pictures are of the same construction as the geographical pictures, and illustrate celebrated buildings and persons, scenes of great events, coins, monuments, etc.

Pictures.

CHAPTER XI

ARITHMETIC

THE work done in arithmetic I found to vary considerably, both in extent and in the methods pursued. In the Prussian people's schools and in preparatory departments of high schools, the course generally provides for the teaching of numbers to 100 during the first year. That this work is too difficult is evident from the amount of urging which the teachers find to be necessary, and that the work is not thoroughly done is shown by the poor work of higher grades of pupils.

Course of Studies.

The course of studies issued by the government of Saxony provides that numbers from 1 to 1,000 shall be developed during the first four years of the course. Yet it is distinctly stated that this work may be extended, provided it can be done without a sacrifice of thoroughness. German money, weights and measures, are to be taught in the first four years, and some operations with fractions most commonly used — as halves, thirds, fourths, tenths, and hundredths.

During the last four years of the course common and

decimal fractions, applications of percentage, and the Rule of Three are required to be taught.[1]

How liberally this plan is interpreted and applied in city schools is shown by the following course as indicated by pamphlets of problems designed for the various grades in Leipsic: —

First Year. — Combinations (addition, subtraction, multiplication, and division) to 20. Multipliers and divisors to 9.

Second Year. — Operations of numbers to 100. Addition and subtraction of tens and units ($43 + 28$; $46 - 27$). Multipliers and divisors to 9. No figure work in this grade.

Third Year. — Combinations to 1,000. Mental operations in adding and subtracting numbers of hundreds and tens, and tens and units ($450 + 290$; $920 - 480$). Multipliers and divisors to 9 (112×8; $856 \div 4$). Slate work: Column addition. Multipliers and divisors to 25. Fractional parts of numbers ($\frac{1}{2}$, $\frac{1}{5}$, $\frac{1}{20}$ of a *Mark*). Work with common weights and measures and German currency. Compound numbers begun (16 days, 18 hours + 10 days, 12 hours).

Fourth Year. — Figure work with integral numbers. Computations with simple fractions (halves, fourths, etc.), and with fractions of like denomination.

Fifth Year. — Continuation of fourth year work, as follows: 1. Reduction ascending and descending without decimals. 2. Addition and subtraction of compound numbers without decimals. 3. Reduction ascending and descending with decimals. 4. Addition and subtraction of compound numbers with decimals. 5. Multiplication and division of compound numbers. 6. Rule of Three by analysis.

Sixth Year. — Fractions, as follows: 1. Idea, origin,

[1] *Lehrplan Sachsen*, p. 56.

and value of the fraction. 2. Reduction of whole and mixed numbers to improper fractions and the reverse. 3. Addition and subtraction of fractions having a common denominator. 4. Multiplication and division of fractions with whole number for multiplier and divisor. 5. Reduction of fractions to higher and lower terms. 6. Reduction of fractions to fractions having a common denominator. 7. Addition and subtraction of unlike fractions. 8. Multiplication and division of fractions, with multiplier and divisor a fraction. 9. Decimal fractions, reading and writing. 10. Reduction of decimals to common fractions and the reverse. 11. Addition and subtraction of decimals. 12. Multiplication and division of decimals. 13. Geometrical problems.

Seventh Year. — Proportion with fractions, interest, percentage, partnership, geometrical problems.

Eighth Year. — Miscellaneous reviews of proportion, interest, and partnership. Equation of payments, discount, and present worth, allegation and general review.

Text-books and Apparatus.

Text-books in the hands of pupils frequently consist only of problems logically arranged as indicated above. These books or pamphlets of problems are supplemented by work given out by the teacher from time to time.

In several of the text-books in general use I notice that more mental work, especially in difficult combinations, is provided for than in our text-books, and comparatively few reasoning problems are given in the books intended for pupils of the five lower grades (years).

Subjects of sections are given, but the reviews are so frequent it may be said that much of the work pre-

sented is without finger-posts or helps of any kind. All explanations, rules, and definitions are taught by the teacher.

To enable American teachers to compare the work which their pupils are expected to do with the work of corresponding grades in Germany, I quote five problems selected at random from the miscellaneous problems at the end of each year's work as given in a popular book: —

Work of each Year.

Second Year. — 1. Four weeks are how many days? 2. In a meadow are 26 cows, 10 sheep, 9 goats, and 8 horses: how many animals there? 3. How many legs have (*a*) 3 May bugs? (*b*) 4 geese? (*c*) 10 crabs? 4. What is the sum of all the numbers from 1 to 8? 5. The difference between two numbers is 8. What can the numbers be?

Third Year. — (1.) $36 + 45 + 89 + 21 - 12 - 36 = ?$ (2.) $279 - 38 - 94 - 61 + 269 = ?$ (3.) Four boys earn daily 2 *Marks* apiece. Their father earns 5 times as much as one of his sons. How much do all earn together? (4.) A boy went to the store for 27 cents' (*Pfennigs*) worth of sugar and 25 cents' worth of coffee. Having with him 7 ten-cent pieces, how much should he bring back? (5.) A merchant made on Sunday 14 *Marks* and on each succeeding day one *Mark* more than the day preceding. How much did he make during the entire week?

Fourth Year. — (1.) If a man works 8 hours daily on the average, how many hours does he work in the first quarter of the year? (2.) Subtract the sum of the numbers from 65 to 71 from the sum of the numbers from 98 — 112. (3.) How much is $(36 \times 47 \times 51) - (21 \times 38 \times 12)$? (4.) A regiment has 12 companies, and each company has 245 men; 95 men are away on a

furlough : how many men in the regiment? (5.) A club consists of 325 members, who pay in all 3,900 *Marks:* how much does each member pay?

Fifth Year. — 1. A man bought a piano for 360 *Marks*, and paid every month 14 *Marks* 40 *Pfennigs*. How long would he be in paying for the piano?

[This problem would be the same if dollars were used instead of *Marks*, and cents instead of *Pfennigs*.]

2. 119 years 24 days 11 hours
— 89 " 19 " 23 "

3. A man is in debt 4,800 *Marks* 80 *Pfennigs*. He pays $\frac{1}{4}$, then $\frac{1}{5}$, and finally $\frac{1}{16}$ of the debt. How much does he still owe?

4. A person pays for his breakfast 25 Pf., for his dinner 1 M. 10 Pf., and for his supper 65 Pf. What will be the cost of board during the first four months of 1890?

5. 126 × 184.312 kg. ÷ 168.

Sixth Year. — 1. (*a*) 3.4 ÷ 1.7 (*b*) 3.4 ÷ 0.17 (*c*) 3.4 ÷ 0.17.

2. How many times greater is $\frac{3}{4}$ M. than 0.05 M.?

3. In a vessel there are 38½ pint glasses of beer, which is $\frac{3}{10}$ of the capacity of the vessel. What will the vessel hold?

4. $\frac{1}{10}$ of the money in my pocket-book amounts to 1.70 M. How much is $\frac{12}{25}$ of it?

5. A ship sails 37.92 km. in 4 hours. How far does she go in 1 minute?

Seventh and Eighth Years. — 1. A man pays a tax of 48.40 M. yearly. How much property does he own if the tax is 1¼ % of it?

2. In an orchard there are 5 times as many apple-trees and 4 times as many cherry-trees as pear-trees. How many trees of each kind in the orchard?

3. In a hotel 20 gas-jets are lighted, 6 hours daily, for 6 months, for which 500 M. are paid. What should

be the cost of lighting 24 gas-jets, 4 hours a day, for 9 months ?

4. How much money must be put in the bank, Dec. 31, 1890, to get therefrom 978½ M. Dec. 31, 1891, interest 3% ?

5. What is the capital of a man who receives 24.40 M. daily, and his money earns 4½ % ?

Apparatus.

Numeral Frames (*Rechen-Machinen*) are universally used in the lower grades. These frames are of various kinds — generally balls upon wires, in a frame four or five feet high. The balls are so large that they may be seen distinctly from all parts of the room. Charts having lines, dots, circles, and squares upon them are also used for elementary number work.

Blocks in forms suitable for teaching areas of surfaces and contents of solids are extensively used.

Disks, squares, and blocks are used for teaching fractions. The disks are sometimes constructed in such a way as to permit the fractional units to be separated and put together, to teach and illustrate the various combinations.

Weights, measures, and charts are used to teach the elements of denominate numbers.

Examples of work in Primary Grades.

As I have said, there is a great difference in the amount of work attempted in the first year. Yet it is noticeable that the fourth year in school finds the pupils of all schools doing much the same work both in kind and amount.

Various devices for teaching numbers in the lowest grades were observed, as will be shown in the following illustrative exercises : —

In a school of the first grade in Berlin I found pupils working upon combinations to twenty, and combinations by tens to one hundred. Blocks and a numeral frame were before the pupils. The numeral frame was four feet square, and had ten wires. Upon either side was a board a foot wide, concealing the balls. (Fig. 1.)

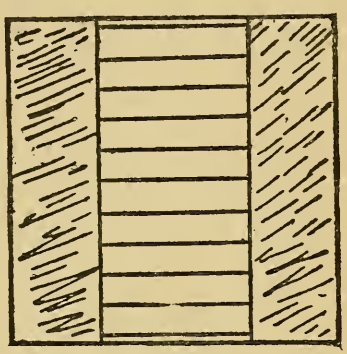


FIG. 1.

Teacher — (pushing in sight 12 balls upon the wires). "What does 12 consist of?" (Calling upon one pupil.)

Pupil. — "12 consists of 1 ten and 2 units."

Class in Concert. — "12 consists of 1 ten and 2 units."

The practice of having one pupil give an answer, and when correct, to have all the pupils repeat the answer, was continued throughout the exercise. The teacher moving the balls in quick succession, asked the following questions : 2 + 2? 12 + 2? 2 + 4? 12 + 4? 2 + 3? 12 + 3? 2 + 6? 12 + 6? 2 + 7? 12 + 7? 2 + 8? 12 + 8? the pupils answering in entire sentences thus : 2 and 2 are 4, etc. The same questions were given without the balls, and answered as before.

The teacher continued as follows : —

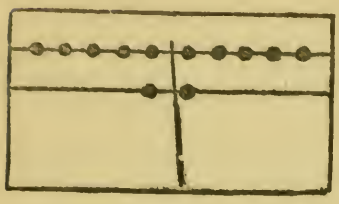


Fig. 2.

T. — "How can we get the half of 12?"

P. — "Divide the 10 balls and two balls into two equal parts."

T. — "Do this with the balls."

With the short pointer the pupil divides the balls thus (Fig. 2), saying "the half of 12 is 6."

T. — "2 times 6 are how many?"

P. — "2 × 6 is 12."

T. — "12 is how many times 6?"

Pupils do not seem to know. Numeral frame used and all reviewed. All pupils interested, and indicate their readiness to answer all questions by show of finger.

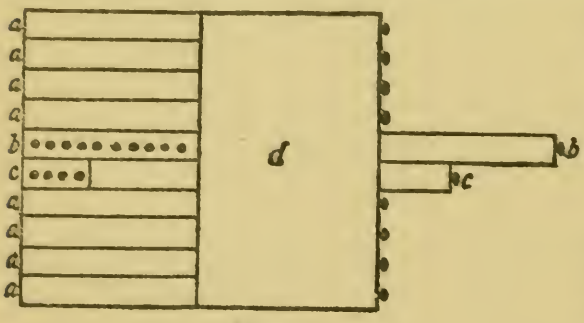


Fig. 3.

There is occasionally seen a device which some teachers like better than the numeral frame for teaching number. It consists of a frame having slides of counters on one side, and a blackboard on the other, thus : (Fig. 3.)

a = slides closed ; *b* = slide wholly open ; *c* = slide partially open ; *d* = blackboard raised so as to allow slide to move under it.

FIG. 4.

Quite often the relation between the numbers to ten is indicated by rows of blocks upon the teacher's desk, thus: (Fig. 4.)

Large blocks are also used upon the teacher's desk to teach all the combinations to twenty. Sometimes the blocks are divided into halves and fourths. In one school of the first grade, I saw such work as the following done: —

$6 \div 2$. $8 \div 4$. $7 \div 2$. $9 \div 4$.

To teach $7 \div 2$ the teacher placed 7 blocks, thus: (Fig. 5) then to make the divisions equal, placed 3 blocks on one side, and three blocks on the other side, dividing the remaining block in two parts, and placing the pile as here represented (Fig. 6).

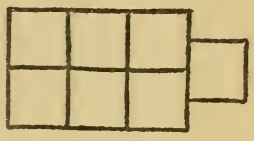


FIG. 5.

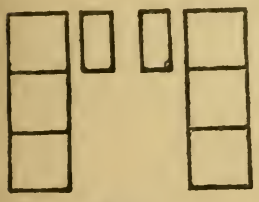


FIG. 6.

The teacher said he taught only halves and fourths in this grade.

Combinations by tens to 100 are generally practised in the first grade. The following notes of a visit in Eisenach indicate the kind of work done in this grade.

Blocks and numeral frames used. The following questions asked and answered with and without objects: —

How many more than 10 is 20?
" " " " 10 " 40?
" " " " 20 " 40?
" " " " 40 " 60?
50 + 10? 50 + 30? 60 + 30?
100 is how many more than 50?
" " " " " " 70? etc.

1 *Mark* (100 *Pfennigs*) less 30 *Pfennigs?*

1 *Mark* less 50 *Pfennigs?*

How much must be added to 20 *Pfennigs* to make 1 *Mark?* etc.

How many times 20 is 40?

How many times 30 is 60? etc.

Tables of 10's, 20's, 30's, etc. are repeated forward and backward thus: 1 times 10 = 10.
2 times 10 = 20, etc.
1 times 20 = 20.
2 times 20 = 40, etc.

Many problems like the following are given based upon the tables as just given: —

Cost of 3 books at 30 *Pfennigs* apiece? etc.

How many books can I buy for 60 *Pfennigs*, at 30 *Pfennigs* apiece? How many for 80? etc.

In answer to the questions in division, pupils are allowed to say "$8 \div 2 = 4$, because 2×4 is 8," and "$\frac{1}{5}$ of 10 is 2, because 2×5 is 10."

In all operations the pupils of the two lowest grades are taught quite generally to work through and by tens.

The following examples of processes by which pupils are led to add and subtract numbers to 50 will illustrate this method: —

$9+7=16$ $(9+1+10;\ 10+6=16)$
$7+9=16$ $(7+3=10;\ 10+6=16)$
$23+8=31$ $(23+7=30;\ 30+1=31)$
$38+6=44$ $(38+2=40;\ 40+4=44)$
$16-7=9$ $(16-6=10;\ 10-1=9)$
$33-8=25$ $(33-3=30;\ 30-5=25)$
$41-9=32$ $(41-1=40;\ 40-8=32)$

This method is advocated as an aid to the memory, and because the "number memory" of some children is weak. After the first few months of practice, this form of analysis is abandoned, and combinations of all kinds are made directly.

The following notes of the recitation of a third year class give a good example of rapid reckoning, and of the means of attaining quickness and accuracy: —

Teacher gives rapidly $4 + 8 + 9 + 6$, etc., until the sum is over 200.

Several similar problems given, followed by problems in subtraction, beginning with a large number, and calling for successive subtractions as, from 208 take 6 take 8, etc. This is not given very rapidly, — at the rate of about 18 numbers to subtract in a minute. Adding and subtracting by 2's, 3's, etc., followed by mental problems in multiplication and division.

Teacher gives problem 48 + 40, and says, —

"What do you think of in adding 40?"

Pupil. — "The tens."

Teacher gives quickly and sharply 83 + 40 + 50 + 20 + 40, etc. Also 843 − 70 − 60 − 30 − 40, etc. Also 6 × 30, 4 × 40, 7 × 50, etc.

Then 7 × 18.

Teacher. — "What do you think of first in multiplying this number?"

Pupil. — "The tens."

Teacher. — "Then what?"

Pupil. — "The units."

Teacher asks for "explanation" of 7 × 18. Pupil says 7 × 10 = 70, 7 × 8 = 56, 70 + 56 = 126.

As a rule not so many subjects or rules of arithmetic are studied as with us, the time of the recitation in middle and higher grades being given to reviews of practical problems. Much mental work also, frequently by short processes, is done in these grades. In some schools I noticed that the teacher sought to review a subject or process *from the beginning*. These characteristics are illustrated by the following notes of middle grade lessons.

Middle Grades.

In the fourth year class of a Berlin gymnasium I saw some rapid mental work in reduction — no books or slates in hands of pupils. The plan was to give questions like the following in a kind of series, and ask for volunteers to give answers, — no explanations: —

In 1 day how many hours?

In 3 days how many hours?

In 3 days and 10 hours how many hours?

In 8 days and 16 hours how many hours?

In 1 foot how many inches?

In 6 feet how many inches?

In 6 feet and 8 inches how many inches?

In 8 feet and 10 inches how many inches? etc.

In 48 hours how many days?

In 50 hours how many days?

In 100 hours how many days?

In 200 hours how many days? etc.

How much is a kilometre? [Pupils give known distances from the schoolhouse.]

About how long would it take to walk slowly one kilometre? [*Ans.:* 15 minutes.]

How long to walk 2 kilometres?

How long to walk 8 kilometres?

How long to walk 12 kilometres?

How many kilometres in a (Prussian) mile? [*Ans.:* 7 km. 500 m.]

How long would it take to walk 7 km.?

How long would it take to walk 500 m.?

How long would it take to walk a mile?

How long would it take to walk 2 miles?

This work is continued until pupils show signs of weariness, then teacher places upon the blackboard the following problem in long division, thus: —

825,643 : 78

The teacher with crayon in hand performs the problem as indicated by the pupils. One pupil after another is called upon to recite while others listen. The words of explanation follow, the italicized figures and figures of the quotient only being placed upon the blackboard. The words expressing these numbers are spoken with great emphasis : —

78 goes into 82 once. Once 78 is 78, and ***4*** is 82. Bring down 5. 78 goes into 45 no times. Bring down 6. 78 goes into 456 five times. 5 × 8 is 40, and ***6*** is 46. 5 × 7 is 35, and 4 is 39, and ***6*** is 45. Bring down 4. 78 goes into 664 eight times. 8 × 8 is 64, and ***0*** is 64. 8 × 7 is 56, and 6 is 62, and ***4*** is 66. Bring down 3. 78 goes into 403 five times. 5 × 8 is 40, and ***3*** is 43. 5 × 7 is 35, and 4 is 39, and ***1*** is 40.

The problem as it appears when completed is as follows : —

$$\begin{array}{r} 825{,}643 : 78 = 10{,}585 \\ \underline{456} \\ \underline{664} \\ \underline{403} \\ 13 \end{array}$$

Occasional mistakes were noted in this class as in all fourth year classes which had attempted to do too much in earlier grades. Generally as much ground is gone over in the first year of the gymnasium as in the first two or three years of the public or people's schools. In fourth grades of the latter class in Berlin

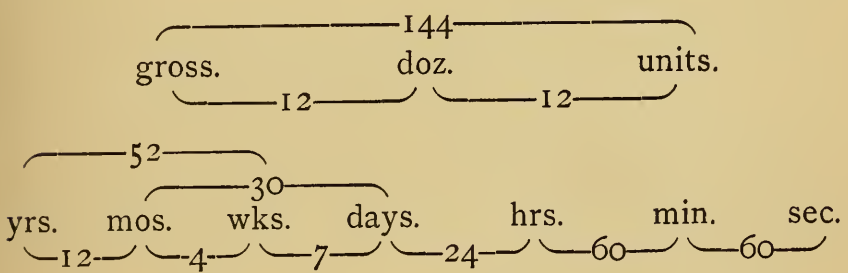
I saw much better work done than that above noted. In one school fifty or more problems like the following were performed rapidly and accurately during a recitation hour: —

In 3 days and 16 hours how many hours?

In 12 feet and 6 inches how many inches?

In 200 hours how many days?

A little device used by the teacher of this class helped to hold the interest of the pupils. He put the following upon the blackboard, rapidly questioning as he wrote: —



Teacher with pointer, pointing to years, said 4; then pointing to months said 8, and "how many months?"

Pupils by show of hands indicate when they have the answer.

In the same class review problems like the following were performed mentally: 834 + 134.

400 − 164 : 6 × 24 − 144 ÷ 24.

240 ÷ 24. 6 × 24 + 12; etc.

Although formal explanations do not as a rule seem to be required from pupils of middle and lower grades,

analysis of problems in well-defined steps is often insisted upon in all grades.

The following instance of work seen in a fourth-year grade of a Leipsic public school will illustrate what I mean: —

Question. — $\frac{1}{6}$ of 98 dozen?

Answer. — $\frac{1}{6}$ of 96 doz. = 16 doz. $\frac{1}{6}$ of 24 single ones = 4. $\frac{1}{6}$ of 98 doz. = 16 doz. and 4.

Ques. — $\frac{1}{4}$ of 72 gross?

Ans. — $\frac{1}{4}$ of 40 gross = 10 gross. $\frac{1}{4}$ of 32 gross = 8 gross. 10 gross + 8 gross = 18 gross.

Ques. — $\frac{1}{4}$ of 74 gross?

Ans. — $\frac{1}{4}$ of 72 gross = 18 gross. $\frac{1}{4}$ of 24 doz. = 6 doz. $\therefore$ $\frac{1}{4}$ of 74 gross = 18 gross and 3 doz.

Ques. — $\frac{1}{8}$ of 120 days?

Ans. — $\frac{1}{8}$ of 80 ds. = 10 ds. $\frac{1}{8}$ of 40 ds. = 5 ds. $\frac{1}{8}$ of 120 ds. = 15 ds.

Ques. — $\frac{1}{8}$ of 123 days?

Ans. — $\frac{1}{8}$ of 120 ds. = 15 ds. $\frac{1}{8}$ of 1 d. = 3 h. $\frac{1}{8}$ of 3 ds. = 3 × 3 h. = 9 h. $\therefore$ $\frac{1}{8}$ of 123 ds. = 15 ds. 9 h.

Decimals to two places were used in this class.

Higher Grades.

In the higher grades, mental work with large numbers and logical analysis or explanations are required. Frequent reviews of a progressive character are made in these grades, much of the work being done without the aid of pencil or crayon.

Two recitations of sixth and seventh year grades of a Leipsic public school were noted as follows: —

Sixth Year. — Questions given by teacher. Voluntary answers from pupils by show of hands.

What decimal is equal to $\frac{1}{2}$? to $\frac{1}{4}$? to $\frac{3}{4}$? to $\frac{1}{8}$? to $\frac{3}{8}$? to $\frac{7}{8}$?

What common fraction is equal to .50? to .25? to .75? to .250?

2 *Pfennigs* is what decimal of a *Mark?*

25 " " " " " "

85 " " " " " "

One book cost 2 Pf. What cost a dozen books? What cost 4 dozen books? 6 dozen? What cost a gross?

Five metres cost 75 Pf. What cost 1 metre? What cost $3\frac{3}{4}$ metres?

One dozen cost 18 Pf. What cost $3\frac{1}{2}$ dozen? Explanation: If one dozen cost 18 Pf., $\frac{1}{2}$ dozen costs 9 Pf. and $\frac{5}{2}$ cost 45 Pf. What cost 2 dozen and 10? Explanation: 1 dozen cost 18 Pf. What cost 2 dozen and 10, or $2\frac{5}{6}$ dozen? $\frac{1}{6}$ of a dozen cost $\frac{1}{6}$ of 18 Pf. = 3 Pf. $\frac{17}{6}$ cost $17 \times 3 = 51$ Pf.

$2\frac{1}{4}$ litres cost 36 Pf. What cost 1 litre? Explanation: $2\frac{1}{4}$ or $\frac{9}{4}$ litres cost 36 Pf. $\frac{1}{4}$ of a litre cost $\frac{1}{9}$ of 36 Pf., or 4 Pf. $\frac{4}{4}$ or 1 litre, cost 4×4 Pf., or 16 Pf.

If $2\frac{1}{2}$ bushels last a family $1\frac{2}{3}$ months, how long will $1\frac{2}{3}$ bushels last? Explanation: If $2\frac{1}{2}$, or $\frac{5}{2}$ bushels, last $1\frac{2}{3}$, or $\frac{5}{3}$ months, $\frac{1}{2}$ bushel will last $\frac{1}{5}$ of $\frac{5}{3}$ months $= \frac{1}{3}$ months; and $\frac{2}{2}$ of 1 bushel will last $2 \times \frac{1}{3}$ months, or $\frac{2}{3}$ months. $\frac{1}{3}$ of a bushel will last $\frac{1}{3}$ of $\frac{2}{3}$ months, $= \frac{2}{9}$

months ; and $\frac{5}{3}$ bushel will last $5 \times \frac{2}{9}$ months $= \frac{10}{9}$ months $= 1\frac{1}{9}$ month.

Figures indicating the processes are placed upon the blackboard by the pupil as he recites.

Seventh Year. — All mental work during the recitation, and most of it review. Pupils answer with great promptness, being called upon promiscuously by the teacher. Many problems like the following are given : —

"Two kinds of coffee to be mixed together. 30 lbs. at 1 *Mark* a pound and 10 lbs. at 1.50 *Mark* a pound. For how much shall 1 lb. be sold to gain 20% ?"

Explanations given with readiness and clearness.

5 % of 800 *Marks ?* Explanation : 1 % of 800 *Marks* = 8 M. ; 5 % of 800 M. = 40 M. Teacher leads pupils to explain it in another way, as follows : 5 % = $\frac{1}{20}$; $\frac{1}{20}$ of 100 = 5 ; $\frac{1}{20}$ of 800 = 8 × 5 = 40.

Similar problems, involving fractional numbers, given and explained in the same way, thus : —

1% of 1,000 = 10 ; $3\frac{1}{2}$% of 1,000 = 35. Recitation continued and closed with various kinds of problems on profit and loss. All explained, and solved mentally.

Short Processes.

Frequently pupils are led to write the fewest possible figures on the slate or blackboard in solving quite difficult problems. The following exercise, heard in the practice department of a normal school in Dresden will illustrate this practice. The mistakes made in this class, and in other classes where similar

work was attempted, made me doubt its practical value, whatever may be said in its favor as mental discipline.

The problems were placed upon the board, and one pupil at a time was asked to perform the problem, while the others followed and made corrections:

From 87.043 take the sum of 3.504; 9.401; 6.027. The pupil writes

$$\begin{array}{r} 87.043 \\ \hline 3.504 \\ 9.401 \\ 6.027 \\ \hline 68.111 \end{array}$$ Answer.

and said 7, 8, 12, and ***1*** (emphasizing and placing the figures under the first column) makes 13 thousandths; 2, 3, and ***1*** makes 4 hundredths; 4, 9, and ***1*** makes 10 tenths; 6, 7, 16, 19, and 8 makes 27; 2 and 6 makes ***8***. *Answer.* — 68.111.

66.2 × 2.19 placed on the blackboard.

$$\begin{array}{r} 66.2 \times 2.19 \\ \hline 66.200 \\ 912 \\ \hline 144.978 \end{array}$$ Answer.

Performed and explained as follows: —

Result to give thousandths. 2 tenths × 9 hundredths; place 9 under tenths. Hundredths by tenths give thousandths; place 1 tenth under hundredths. Thousandths by whole ones give thousandths; place 2 under thousandths. Multiply: 9 × 2 = 18. Put down

8 thousandths, saving 1 hundredth to be added. $9 \times 6 = 54$ hundredths + 1 hundredth = 55 hundredths. $1 \times 2\ 2 =$ hundredths + 55 hundredths = 57 hundredths. Put down 7 hundredths, saving 5 tenths to be added. $9 \times 6 = 54$ tenths + 5 tenths = 59 tenths. $1 \times 6 = 6$ tenths + 59 tenths = 65 tenths. $2 \times 2 = 4$ tenths + 65 tenths = 69 tenths. Put down 9 tenths, saving 6 whole ones to be added. $1 \times 6 = 6 + 6 = 12$. $2 \times 6 = 12 + 12 = 24$. Put down 4, saving 2 tens to be added. $2 \times 6 = 12 + 2 = 14$ tens. Put down 4 tens and 1 hundred. Answer: 144.978.

A third problem was given, to which an approximate answer was sought; i. e., an answer to three places of decimals. The problem was 67.34 × 9.823,789 *Marks*. The pupil said: Units and thousandths give thousandths. Place 9 under thousandths. For the same reason 8 under 4, 2 under 3, 3 under 7, 7 under 6. Written on the board as follows:—

67.340
73.289

$(7 \times 6) + (3 \times 7) + (2 \times 3) + (8 \times 4) = 101$. Place 1. $(3 \times 6) + (2 \times 7) + (8 \times 3) + (9 \times 4) + 10 = 192$. Place 2. $(2 \times 6) + (8 \times 7) + (9 \times 3) + 10 = 105$. Place 5. $(8 \times 6) + (9 \times 7) + 10 = 121$. Place 1. $9 \times 6 + 12 = 66$. Place 66. *Answer*. —661.521. Only one and two-tenths *Pfennigs* ($\frac{1}{5}$ of a cent) less than the

correct answer, or the answer obtained by performing the problem in full.

Other similar problems were performed in the same mechanical but rapid manner.

Multiplying by factors also is sometimes seen in middle and higher grades. Thus there is placed upon the board : $45 \times 18 = 45\ (20 - 2) =$

The pupils solve the problem mentally $20 \times 45 = 900$. $2 \times 45 = 90$. $900 - 90 = 810$.

This suggests good mental work, and a great saving of time.

In the practice department of the Weimar Normal School I found cards posted in the various rooms giving "pattern" measures of various kinds. The distance between two given points was set at 10 metres ; between two others at 25 m. ; between two others at 100 m. The distance from the railroad station to given points within ten or twelve miles was given. Again the square contents of the floor of a given room was given as almost 50 q. m., and of another as about 100 q. m., and so on to, 1,300 q. m. In cubic measure the contents of the various solids and rooms was stated. The teachers informed me that these measures were constantly used as standards of comparison. It is noticeable that the importance of placing the statements in *all* of the rooms was recognized.

Relative Measures.

In visiting classes in arithmetic, I was frequently

struck with the frequency of reviews which appeared to be very well known to the pupils. At first I thought that it was on account of my presence, and that teachers were anxious to show what their pupils knew. But later I came to believe that it was partly for the sake of impressing upon the pupils a certain order of procedure which would be of service in subsequent work. This might not have been in the minds of teachers, but I saw, or thought I saw, a certain positive value in the methodical reviews which were made. Another use of frequent reviews, doubtless, was in the minds of teachers, and that was thoroughness. Of the importance of frequent repetition as a means of securing thoroughness there can be no doubt, but to secure thoroughness in accuracy and rapidity of computations it would not seem necessary to repeat constantly the various steps of previous processes, especially when those steps are familiar.

Frequent Systematic Reviews.

Still another object of the particular form of reviews which I heard, was to lead up by orderly steps to the subject to be presented, or to a lesson from the book, so as to have the entire subject or process appear together. To show what I mean, I will transcribe a few notes taken of the first recitation which I heard in arithmetic. It was a second year class of girls, conducted by a man who is the author of a popular arithmetic. An illustration of the same thing will be seen in notes of other lessons.

The teacher goes to the numeral frame and asks questions as he moves the balls into position.

In 10 there are how many tens?

" 30 " " " " "

" 60 " " " " "

" 80 " " " " "

Then the same and similar questions are asked *without* the use of balls.

The same course is pursued in asking the following sets of questions, first with, and afterwards without, the objects; viz.: —

1. How many tens and units in 15? in 26? in 34? in 56? etc.

2. 10 less 4? 60 less 4? 40 less 4? 50 less 4? etc.

3. 8 + 4? 18 + 4? 48 + 4? 68 + 4? 38 + 4? etc.

4. 4 + 10? 34 + 10? 54 + 10? 34 + 20? 44 + 20? 64 + 20? 10 + 40? 30 + 40? etc.

5. 4 + 16? 24 + 16? 34 + 16? 54 + 16? 64 + 16? etc.

6. 47 + 20? 47 + 23? 66 + 30? 66 + 34? 34 + 30? 34 + 36?

7. 15 + 20? 15 + 23? 26 + 20? 26 + 22? 42 + 30? 42 + 33? 63 + 20? 63 + 28? etc.

Answers are given in entire sentences by pupils one at a time, the others attending and indicating by show of hands that they know the answer. When a pupil does not understand the problem or does not answer promptly, the teacher, using the numeral frame, goes

through the process beginning with simple combinations. Thus in the problem 48 + 34 ? the teacher says, 48 + 30 ? How many more than 30 is 34 ? Then how many are 48 + 34 ?

The teacher is very particular that pupils attend ; is stern and even cross at times ; at times gentle, saying, "my dear child," and when an answer is given promptly, "good, my child !" "Very well my dear !" The teacher says that combinations to 100 are the work of the first year ; yet the pupils do not know them thoroughly in this grade.

The courses of study provide that mental and written work be carried on together. As a rule far more is done in Germany without the aid of figures than in our schools, especially in making difficult combinations. Very little of analysis and "explanation" is taught in the lower grades, the work there being largely with abstract numbers.

Mental Work.

Short processes with few figures characterize much of the work in the middle and higher grades.

CHAPTER XII

MISCELLANEOUS SUBJECTS OF INSTRUCTION

Drawing.

DRAWING is made obligatory in all of the public elementary schools, and in all or some classes of the high schools. There are some special teachers of drawing in the private and higher schools, and a few in the graded elementary schools; but generally the regular teachers are expected to carry on the work alone.

While instruction in drawing is general, and while there is great skill displayed in teaching by special and regular teachers, there seems to be a surprising difference of opinion in respect both to the ends to be reached and to the means employed.

To Americans who are accustomed to attach great importance to the use of objects in connection with drawing, and who see how extensively objects are used by German teachers in teaching other subjects, the limited extent to which the teaching of drawing from objects is carried on in all the lower grades is a matter of great surprise. So far as I could discover, there are comparatively few schools in which, apart from geogra-

phy and nature lessons, objects are used as models for drawing in any grade below the seventh.

Drawing by means of squares or "net lines," and even from flat copy, finds much favor in a large number of schools. Indeed, a recent order from the government obliges all teachers of Prussia to follow the former plan. An order which went into effect in 1888 makes the following provisions[1] for graded people's schools: —

In the second and third years the pupils shall be brought to comprehend correctly and to draw such plain figures as fit in a square of net lines, to complete partly outlined symmetrical figures, to draw from memory simple forms, and to change given drawings. The instruction includes the drawing of straight lines in different positions, and drawing from flat copies, polygons, and stars, whose constituent parts in respect to situation, form, and size have been talked about. All forms, wholly or in part, are to be placed upon the blackboard by the teacher, or orally described. The pupils are to draw in books having blue squares of net lines one centimetre wide. Practice with net lines ceases at the end of the third year. In the fourth, fifth, and sixth school year free-hand drawing of plain figures is carried on. The instruction during these years includes: —

1. Rectilineal figures which fit in the square.

[1] From Sander's *Lexikon der Pädagogik.* Art. *Zeichenunterricht.*

2. Forms based upon the octagon, hexagon, and dodecagon.

3. Forms bounded by straight and curved lines.

4. Curvilinear ornamental forms.

Points for assistance in construction are allowed at first, but are not used throughout the course. In the seventh and eighth school years the work consists of free-hand drawing of objects. The instruction in this part of the course begins with simple geometrical figures, continuing with more and more complex forms, until the boundary lines of common articles of furniture, etc., are drawn, and representations in full are given of plaster of Paris models. The instruction in the last two or three years of the course is largely with individual pupils.

The plan outlined above is based upon the system of Stuhlmann, who has many followers throughout Germany. There are, however, many teachers who object strongly to beginning formal instruction so early, and to the use of squares and net lines in drawing. The latter objection is sustained by physicians on account of the injurious effects of the fine lines upon the eyes.

One of the foremost opponents of Stuhlmann's system is Flinzer of Leipsic, who would begin the instruction of drawing with children of ten years of age. Proceeding from the square, vertical, horizontal, and oblique lines are taught : these are followed by the drawing of regular triangles, hexagons, and octagons, the circle, other

polygons, and ellipses in the order named. These forms serve as a foundation for ornamental forms, the drawing of which follows. The latter part of the elementary school course is given to drawing from models, and teaching perspective, light and shade.

Whatever the followers of Flinzer may accomplish in the elementary schools, certainly his own success in the Real gymnasium of Leipsic is unquestioned. The work of his pupils in drawing from models as I saw it was certainly the best work of the kind I had ever seen.

In most courses of study the teachers are enjoined to connect the drawing with geometry, and in girls' schools with sewing, by drawing patterns, etc. In many schools I saw an effort made to connect drawing with all subjects of study, particularly with the nature lessons in which the objects that the pupils had observed were represented. Drawings of simple machines, and apparatus used in experiments connected with the lessons in elementary science, are quite frequently seen in the composition-book, as illustrations of what is described.

Manual Training.

Most, if not all, of the states now require sewing to be taught in the elementary public schools. It is also taught in some of the private and continuation schools. Custom varies somewhat as to the time at which sewing is begun. In Saxony[1] it is begun

Hand-work for Girls.

[1] *Lehrplan Sachsen*, p. 118.

in the fifth school year and continued in weekly lessons of two hours each throughout the rest of the course, or for four years. In the course provision is made for knitting, plain sewing, patching, darning, and, whenever possible, for cutting garments to measure. All instruction is given in classes, and the pupils are furnished the same material and work.

In Prussia no fancy sewing is attempted in the elementary schools, and materials for repairing and making articles of clothing are brought from home. Local authorities may provide for instruction in the use of the sewing-machine.

Quite an essential feature of the work done in higher grades is the drawing of patterns for stitching and embroidery.

Special teachers are employed generally to teach this branch of instruction, although a large proportion of them are not certificated teachers. Many of them, especially in rural districts, are wives of the regular teachers, and receive a very meagre salary for their services.

Hand-Work for Boys.

There is little manual instruction for boys in regularly established public and private schools. In 1888 only twelve schools were reported as providing for manual training in their courses of study, although there were at that time over one hundred special industrial schools reported, which had some connection with public or private institutions.

Twelve of the two hundred normal schools had in 1888 introduced manual training, and very many asylums for abnormal children have shops connected with them.[1]

Singing.

As would be expected in so musical a country as Germany, singing holds a prominent place in the programmes of all grades of schools, and is most carefully and thoroughly taught.

Ends Sought.

The ends sought in teaching singing, as given in several courses of study, are to sing with ease church chorals and the national songs. Incidental to this is the cultivation of a musical ear and taste, which may be a foundation for advanced study and practice.

Teachers.

As a rule there are no special teachers of singing in the elementary people's schools, the instruction in that branch being carried on by the regular teachers. Sometimes a regular teacher of a large graded school is given charge of the singing in several rooms.

Use of Musical Instrument.

The use of some musical instrument — organ, violin, or piano — is thought necessary to the best work in singing in all grades. I visited few schools where one or the other of these instruments was not used in the singing-lesson.

[1] For a brief statement of the kind of work done in special trade and manual-training schools see page 61.

There is not so much singing by note in the lower grades as in corresponding grades of our city schools, more time being given in the beginning of the course to singing by rote common songs. Singing.

From two to four or more years is designated in the various courses of study as the time to be given to singing by ear before singing by note is begun. In some schools figures are used before notes and as a kind of preparation for the use of them. Yet there is strong opposition in some places to the use of figures, mainly because their use is unnecessary.

More singing in unison is observed in the elementary schools than in similar schools of our country. In the Course of Study for the Schools of Saxony, it is stated that during the first four years only unison singing is required. Yet teachers evidently are not prohibited from teaching some pieces in two parts, judging from the singing which I heard in the lower grades. In the directions accompanying the above-named course, it is recommended that the chorals be sung in unison, and that the national songs, whenever possible, be sung in two parts. Three-part singing is recommended for the higher classes when the circumstances are favorable. Part-Singing.

In ungraded schools part-singing is not generally taught. In the Prussian partially graded schools the course provides that singing be in unison, although part-singing is not prohibited in the advanced division.

Singing in Higher Grades.

While the requirements of the lower grades, in respect to note and part singing, seem less severe than those of corresponding grades in this country, the singing of the pupils of the higher grades, in both of these respects, is quite as good as any of our schools can show. I remember well several lessons in which three parts by note were most admirably taken. One was an exhibition of the skill of boys, in a school connected with an orphan asylum. It was the singing of a long sacred piece of music which had been taught them, and in sweetness of expression, purity of tones, and distinctness of articulation, few professional singers could surpass.

Another class in a people's school of Berlin showed great facility in reading a new piece written in three parts, by the teacher, upon the blackboard. The teacher explained as he wrote each part, the pupils looking intently at the work. In this, as in other singing exercises, I noticed that every pupil was expected to sing. The teacher went among the pupils, and was very severe whenever he detected an error. Individual pupils were called upon, and trained in opening the mouth, etc. Imitation of the teacher was encouraged from time to time, and for a change and rest the pupils were asked at frequent intervals to stand up and sit down promptly a few times.

One marked characteristic of the singing in all

grades is the sweetness and purity of tones. In the lower grades soft and low tones are constantly exacted. Loudness of tones is repressed in various ways. In one first grade school I found the teacher beating the time of a rote song, and whispering as he beat. His whispered directions were apparently expected to be heard by the pupils. In other schools lower tones were demanded by the teachers' hissing, and in others by earnest exclamations.

Soft and Low Tones.

In the lower grades I noticed that singing was brought into connection with other studies, especially with the observation lessons and religious instruction. The course of study in Prussia expressly states that, in the lower grades it will not be well to have the pupils sing an entire hour, but to use for singing a small portion of the time allotted to other subjects. The same course mentions the use of singing for beginning and closing the session, and also for accompanying the gymnastic exercises.

Connection with other Studies.

Physical Training.

Systematic instruction in gymnastics is made obligatory in the schools of nearly every State. In each graded school of cities and large towns there is generally a room well fitted-up with apparatus, and devoted exclusively to physical exercises. The pupils of each grade or room assemble for exercise in this room at least twice a week, each lesson lasting about fifty

minutes. In summer the school-yard is used for some of the exercises, such as marching, free gymnastics, etc.

There are special teachers of gymnastics, but the custom is very general for each regular teacher to conduct the physical exercises of his own class. But whether the exercises are conducted by special or regular teachers, there is an evident system in them all, planned by experts whose object is to proceed from the simplest movements to movements more and more difficult, with the view of developing strength and healthfulness of the body.

In the free gymnastics there is a little of what is called play; but generally the exercises are rigidly severe, with no elements of attraction to children except the natural pleasure derived from bodily movements, and an element of competition attending them.

Religious Instruction.

Religious instruction is given in all schools, both public and private, and, as a rule, is given by the regular teachers, although clergymen are appointed by the government to teach in some of the higher grades and in schools where special instruction is needed. The religious belief of a plurality of the parents determines the character of the teaching — whether Protestant, Roman Catholic, or Jewish. In some sections twelve or more pupils of the minority may demand special instruction, different from what the plurality receive.

This instruction is given either by special teachers in the school where the pupils are who desire the special nstruction, or the pupils may go to another school to eceive the desired instruction.

The various courses of study make specific provision for instruction according to Protestant and Roman Catholic faiths, although only slight differences are observable. There is in both courses provision for learning Bible stories, Bible history, explanations of the Bible and book of worship, and the catechism. The memorizing of passages from the Bible and book of worship, and the singing of hymns and chorals, also constitute a part of the religious instruction.

When it is considered that instruction is given from two to four hours a week in all grades throughout the entire course, the large amount of work accomplished is not wondered at. At the end of an eight years' course of the people's elementary school, the children not only know the principal events recorded in the Old and New Testaments, but are able to recite from memry much of their contents. They are familiar also with the principal events of church history, and are acquainted with the doctrines of their faith as contained in an extended catechism.

In regard to the character of the teaching of this branch of instruction, little fault can be found with it as an intellectual exercise. In method, and generally in substance, the lessons are praiseworthy, and, so far as

my observation goes, there is little of what may be called sectarianism in the teaching. Yet I could but feel as I heard these lessons that the Bible was brought down in some degree to the level of other subjects of instruction, and that there was wanting in consequence the inculcation of reverence for sacred things. Possibly the close contiguity in time and place of secular and religious subjects may have had its effect in producing the impression it did, and possibly the impression was a correct one for the same reason. I noticed that the danger of diversion to secular subjects was avoided, somewhat, in some schools by placing religious instruction first upon the day's programme.

CHAPTER XIII

THE HERBARTIAN SCHOOLS

Some of the most interesting work which I saw was in schools taught by the followers of Herbart. The Herbartians, as they are called, are very zealous in the study of principles, and equally zealous in the application of them in their schools. These schools are mainly in Saxony and Southern Germany, and, although they are comparatively few in number, their influence is felt throughout the empire.

The interest in Herbartian philosophy has not materially increased within the past twenty or thirty years, yet it is still earnestly manifested, either in opposition or in favor, among teachers of all grades. In teachers' meetings and in the University lecture-room, the discussion is carried on, and from the character of the opposition to the claims of Herbart's followers, one is attracted to a study of their theories and practice. This, at least, was one of my reasons for investigating their methods.

Interest in Herbartian Philosophy.

As these methods are in some respects unique, and as considerable interest has been awakened in them in this country, I will give a brief sketch of their char-

acteristic features together with some illustrative exercises.[1]

The chief end of education according to this system is the cultivation of a religious moral character. This end is reached by instruction (*Unterricht*), government (*Regierung*), and training (*Zucht*).

End of Education.

All instruction should be educational, and is defined as that part of education which adds to and serves to complete the influence of environment and experience.

Instruction defined.

The cultivation of character is cultivation of the will; the educational worth of instruction, therefore, depends upon the influence it has in relation to the will. Inasmuch as the character of the will depends upon the thoughts, much attention is given to these — first in widening their circle, and secondly in helping to make them of the right kind. Instruction in these respects is dependent upon the interest awakened. The interest to be effective must be harmonious and many-sided. The word interest is used in a double sense. Interest should be awakened, by which pupils may more easily learn the subjects of instruction. This is called receptive interest. Necessary as this interest may be to instruction,

Interest.

[1] The views contained in this sketch are drawn chiefly from *Vorschule der Pädagogik Herbarts von Chr. Ufer* and *Theorie und Praxis des Volksschulunterrichts von Rein, Pickel und Scheller.*

there must be an interest which will excite the emotions and strengthen the will. This is called a "*far-following*" interest which is peculiar to the Herbartian philosophy. It is an interest which is not merely a means to an end, but is an end in itself. "He has an interest in a thing who holds fast to something known, and seeks to extend it."[1] Perhaps our word *inspiration*, used in the sense of incitement to greater endeavor in the pursuit of knowledge, expresses the kind of interest which is here demanded.

Again, the instruction should awaken not merely an indirect interest, — an interest gained by desire for rewards either near or remote, — but a direct interest in the subjects themselves, with no incentives except a desire of knowing.

This direct or immediate interest should be extended — "*many-sided*" — so as to be a protection against moral weakness, which comes from a one-sided interest — such as an interest in one's business as the only end in life.

The many-sided interests are those which are derived from knowledge, and those which are derived from association with others. Of the first kind are (1) an empirical interest, or an interest in the variegated and manifold surroundings. (2) A speculative interest, or an interest in the causes of certain phenomena and events. (3) An æsthetic interest, or an interest

[1] *Herbart — Umriss Päd. Vorl.* § 62 (X S. 211).

which is shown in the relations of what is seen. This is manifest in a love of the beautiful in art or nature.

The various kinds of interests, as here defined, are to be awakened both by a right choice and arrangement of the subjects of instruction, and by correct methods of their presentation.

Instruction, as has been said, has for its object the supplementing of what is gained from environment and experience. Knowledge of the outer world is gained from environment, and reflections concerning men arise from experience. Nature and History, taken in a wide sense, are therefore the two chief sources from which subjects of instruction are selected.

Sources of Subjects of Instruction.

Since character is the end of education, matters relating to mankind (History, Language, etc.) are especially emphasized in the choice of subjects to be presented; and since the selection of subjects depends upon the natural development of the child, which corresponds to the development of the human race, there is a grading of instruction according to the historical growth of mankind (*Culturhistorische Stufen*). The disciples of Herbart have made an application of these principles in the selection and arrangement of subjects by years of school life. The following is the arrangement made by Ziller, and is quite generally followed in the Herbartian Schools.

Selection and Arrangement of Subjects.

First year, Fairy Tales; Second year, Robinson

Crusoe; Third year, The Patriarchs; Fourth year, Judges in Israel; Fifth year, Kings in Israel; Sixth year, Jesus Christ; Seventh year, Apostles; Eighth year, Reformation.

Rein, adopting Ziller's plan as a basis, makes some changes as follows: Fourth year, Kings and Judges; Fifth and Sixth years, Life of Jesus.

The fact that the teaching of religion in the schools is demanded in Germany may account in part for the character of the subjects here selected as the basis of instruction. It is well known, however, that Herbart himself, while advocating strongly the cultivation of a religious spirit in schools, regarded the direct teaching of religion as belonging chiefly to the church and home.

Unity, or oneness of thought, is essential to the cultivation of character. There should be, therefore, a binding together of the subjects of instruction; i.e., ideas occasioned by instruction in one branch should have some relation to ideas occasioned by instruction in other branches. This principle is applicable not only to teaching the various subjects embraced under the two great departments of knowledge, but to teaching Language as well. Each subject of instruction, whether in knowledge or language, should be selected and presented with reference to all others.

Concentration.

Moreover, a central point of instruction is regarded as important, and this central point (or rather cen-

tral points, for each year's instruction is supposed to be a unit) is found in that portion of fable or History corresponding to the mental growth of the child to be taught. Thus in the first year, Nature study, Arithmetic, Reading, Writing, and Singing all depend in some way upon the fairy stories which are made the central point of instruction during the year.

Formal Steps of Instruction.

The feature of the Herbartian system which is likely to interest American teachers most is that known as the formal steps of instruction. In the methods of carrying on a recitation whose object is instruction, certain steps or stages are given as essential to a complete realization of desired ends.

Rein and many other disciples of Herbart give five such steps, as follows: —

1. *Preparation.* 2. *Presentation* (of the new). 3. *Combination* (of new ideas with each other, and of new ideas with old ones). 4. *Abstraction* (binding together of ideas). 5. *Application.*

A statement of the aim or purpose of the recitation should first be given; because such a statement prepares the pupils to co-operate with the teacher in his work, by removing from their minds irrelevant thoughts, by exciting their interest, and by giving them an incentive to exert their will.

Every essentially new topic is called a "methodical unity," or a unit to be treated in the method above given. The "methodical unity" may be part of a

given lesson, or it may be one of several related subjects which extend through several recitations.

The following brief explanation of the various steps may assist the reader to a clearer idea of their purposes and methods.

1. *Preparation.* The preparatory step consists of bringing into the consciousness of the pupils old and familiar ideas which are related to the new ideas about to be awakened. New ideas can be apprehended correctly only with the help of ideas which are already in the mind. If there are no related ideas in the consciousness of pupils, the occasions of new knowledge make little impression, and the instruction is without interest. In order to make the reception of new ideas easy and sure, it is necessary to explore and analyze the pupils' circle of thoughts, so far as they relate to the subject to be presented. Moreover, the thoughts thus explored, or brought into consciousness, should be brought together in order, and stated clearly, that the new may be easily distinguished and grasped. All this can be accomplished best by an examination of the pupils, wherein the answers are given without restraint.

2. *Presentation.* When the minds of the pupils are prepared for the reception of new ideas, the occasions of such ideas will be presented, according to the age of the pupil and the subject matter of the instruction. If the preparation has been of the right kind the comprehension of new ideas will be sure and easy, and the

teacher will not find it necessary to do much. When the teacher is obliged to "explain" much, it is a sign that the preparatory step has not been complete.

In the presentation of occasions of new ideas the following points should be kept in mind. There should be such a division of the subject matter to be presented as to insure clearness of comprehension, and such a repetition of what is presented as to fix the ideas in the minds of the pupils. By carefully presenting each part, and afterwards uniting the parts so as to make a complete whole, the pupils, from the strongest to the weakest, are prepared to give clear statements of what they clearly comprehend.

It is important that the subject matter of a methodical unity be presented in an orderly series, and that the presentation be continuous from beginning to end, without interruption. At the close of the presentation all points not fully understood should be made clear. Following every new presentation the pupils should put together in a series of original statements what has been presented. In the middle and higher grades the statements may be written as well as oral. Whenever it is possible, the presentation of the new should be accompanied by drawing.

3. *Combination.* Newly acquired ideas are, in the third step, brought together in the consciousness, for comparison and combination. This process is necessary because it unifies and harmonizes the ideas, and

because by it essential and general notions may be formed.

Especial importance is attached to the separation of ideas which help to form the general notion. What has been acquired by the pupil in previous instruction, and especially what he has acquired from his own experience and surroundings, should be brought in relation to new ideas, for the purpose of perfecting and fixing them in the mind, and also for the purpose of finding such common properties as will be most useful in generalization.

4. *Abstraction.* The purpose of the fourth step is to completely separate the general notion from the concrete objects with which it has, up to this point, been associated. The process in the accomplishment of this purpose is fourfold; viz.: —

(1) The separation of ideas from their concrete objects.

(2) The definite expression of the newly formed ideas.

(3) The bringing together in systematic order what has already been acquired, and by repetition impressing it with the new.

(4) Fixing the general notions by expression in the form of proverbs, rules, etc.

5. *Application.* Knowledge and power have, of themselves, no value. They have value only when they are brought into the service of life, when they are

changed into use. Practice, therefore, in the *application* of what is learned is necessary, and this is the function of the last step. The pupils should be led to use their ideas in different ways, to pass from particulars to generals, and from generals to particulars. Thus, in reading, religious instruction, etc., examples of good and bad conduct may be pointed out by the pupils, and a statement drawn from them as to what they would have done under similar circumstances.

In language, examples which come under a certain rule may be given, and on the other hand a rule or principle may be given which governs certain cases; compositions also may be written according to given rules. In mathematics there may be an application of given rules in the solution of problems. In geography, maps may be drawn from memory, indicating what has been learned. In history, judgments of the character of celebrated people, and of the characteristics of certain periods may be given. There may be drawn, also, from certain lives and events, lessons applicable to the pupils' own lives or time.

To illustrate the principles above stated, especially those in relation to formal steps of instruction, the following examples of lessons are given: —

Fable — First Year.

"The Wolf and Fox" — The Fox is here made the lesson of the day.

Aim: We have already learned something of one of the two comrades who went walking together in the woods — now we shall learn something of the other one — the fox.

First Step. — What do we know about the wolf? He is a bad creature. What has he done with the little geese? What with the little lambs? We have also heard something bad about the fox. What is it? He steals. He is also a bad companion. But he is more clever and cunning than the wolf, and is not easily caught in his bad deeds. Has any one of you ever seen a fox? How does he look?

Second Step. — (*a.*) Description of the fox with the aid of a picture: He is as large as a middle-sized dog, and looks reddish brown. He has a round head with pointed nose, ears standing erect, sharp teeth, and white throat, a long body with thick hide, a long, bushy tail with white end, thin legs, five toes on each foot with strong claws.

(*b.*) Where and how does he live? In a deep cave in the woods; several places to go in and out, and inside a wide space. (Drawing shown.) In rainy, cold, and very warm weather, the fox stays in his cave, and on fine days he lies before the cave in the shade of the trees. In the night, and sometimes in the day, he goes out to steal. He catches hares, little rabbits, and young deer. He steals softly into a barn and gets a lamb, a goose, or a hen. He creeps into the garden

and eats beans, plums, and grapes He is a real thief and murderer. Yet he is good for something; for he kills off the field-mice, and we can use his skin and hair. We do not eat his flesh. The hunter shoots the fox.

Third Step. — (*a.*) In the little stories which you heard, what did the fox steal? (*b.*) Why doesn't the farmer catch him and kill him? He is sly and cunning. In what way does he appear so? By what wild animals is his flesh eaten? By what animals is it not eaten?

(*c.*) Wolf and fox compared: The wolf worse than the fox. The wolf tears children and grown people to pieces. The fox does not do this.

Fourth Step. — 1. The fox is a sly, cunning animal. 2. The fox is a thief and murderer.

Fifth Step. — (*a.*) The fox is a sly, cunning animal. How does any one know that? (*b.*) What wood and field animals does he steal? What house animals does he steal? What fruits and vegetables does he like? (*c.*) Name some animals which live underground! Name some which stay on the earth, in the water, above the earth! (*d.*) What two robber companions now have we learned about? Which is the worse of the two? Why? Which is the more sly and cunning? Is it right for the hunters to shoot the wolf and the fox?

Singing: "*Fuchs, du hast die Gans gestohlen,*" etc.

Saying: (to memorize.) "*Wer die Gans gestohlen hat,*" etc.

Drawing: a fox's house.

The Hartz Mountains.

(Lesson for middle grades, supposed to be given in Eisenach not far from the Hartz.)

Aim: We shall in this lesson learn something more about the mountains in which Heinrich I. often hunted, and in which a famous saying was made known to him after he was made king. What is the saying?

First Step. — 1. The Hartz was the hunting-ground of Heinrich I. We already know other hunting-grounds of counts and kings (others mentioned).

2. The situation of the Hartz: From the hunting-ground of Thuringian Landgraves we can see that of the dukes and kings of Saxony. In clear weather we can see the Brocken from our hills.

What is said of that mountain? What is its size? In what direction does it lie from us? We go along the banks of the Werra. Does it lead us to the Hartz? We go down the Saale. Does that take us into the mountains?

But another river that we know will lead us into the neighborhood of the Hartz — the Unstrut. How near the mountains is it? Drawing on the Blackboard of Thuringian Forest with the well-known heights, and Eisenach, Werra, Saale. (Other rivers and cities indicated on the map.)

3. Before we point out the situation of the Hartz on the map will you tell what you have already heard of it?

(The children give all the information they have heard, and then put together in a continuous narrative all that they have said.)

Second Step. — I. We know now the situation of the Hartz. Let us learn something of its extent. (The map is placed before the children. Under the guidance of the teacher the following facts are learned and recited.) The Hartz extends in the same direction as the Thuringian Forest — from south-east to north-west. The latter, however, is much longer (150 km. to 110 km.), and is also, at least in the southern part, much wider (30 km. to 52 km. From Eisenach to Wilhelmsthal 7½ km.). The shape of the Hartz district is something like that of an ellipse. To the north-west it extends nearly to the Seine. To the south-east nearly to the Saale. It is not cut off so abruptly on either end as on the south-west (Helme Valley), and north-east (North German lowland). If we notice the railroad we see that it entirely surrounds the district. On account of the fact that the boundaries are sharply defined, it can be compared to an island.

II. We shall now learn something of the height of this region. (A relief map is placed before the children. By the help of these two maps the following statements may be drawn from the pupils.) The Hartz forms a single highland which is traversed by deep valleys extending in different directions. In its entire length it is depressed somewhat from north-

west to south-east. Therefore, the north-western portion is called the Upper Hartz, the south-eastern portion Lower Hartz. The boundary between the two parts is not exactly defined. Above the surface of the plateau in Upper Hartz there rises a mountain with a rounded top. The highest peak is the one we can see — the Brocken. It is about 225 m. higher than our Inselberg (915 + 225), and three times as high as our Wartburg. The plateau from which it rises is called Brockenfield. The surface of the plateau and peak is covered with masses of rocks of remarkable shapes. Many of them are covered with moss and vines, just as we saw them on the rocks between Ruhla and Gerberstein. A traveller who goes up from the Lower Hartz has the impression that the Brocken is a separate mountain chain to which the widely extended Lower Hartz seems like a broad footstool. The people who live in the Lower Hartz district say, also, when they go to the north-western part, that they "go into the Hartz." There is another group of granite-covered peaks called Ramberg or Victor's Heights. This lies between two valleys, and is the highest peak of the Lower Hartz, — nearly 600 m. high. The peak lies on the northern border, so that the range when seen from the north appears to be steeper than when seen from the south.

III. The climate, as we know, depends upon the height. It has a rough climate. Why? Northern

situation. North winds. In winter it is very cold here, and there is much snow. Yet the snow does not remain throughout the year, as it does in the Alps.

IV. Vegetation. The whole range, from the summit to the foot, is covered with vegetation, just as it is in the Thuringian Forest. Nowhere, as in the Alps, do we find icy wastes; but only here and there rocks, crags, and blocks. In the upper portions there are peat-bogs, as we have already found on the Rhone. Yet these highlands do not appear like deserts, for they are covered with a fine carpet of moss and vines. In the cold Upper Hartz the needle-trees prevail, while in the Lower Hartz the leaf-trees are most abundant. The inhabitants are mostly engaged in work connected with the forest. Cattle are raised to some extent, but the chief occupation is forestry.

The principal part of the Hartz consists of gray wacke. This is broken through by two great masses of granite formation (Brocken, Ramberg). The gray wacke is in several places mixed with iron and other ores.[1]

V. Structure. Silver was discovered in the Hartz Mountains in the second part of the tenth century. To this discovery the founding of Klausthal, Zellerfeld, and Andreasberg was due. Also Goslar the old Kaiser-city derived its early start from the same cause. (Selections upon these matters in the reading-book to be read.)

[1] Further studied in the Nature lessons.

VI. Valleys. Granite forms the highest peaks of the Hartz, as does the Gerberstein near Ruhla. It is also found in the deep valleys for which the Hartz is celebrated. (Ocker, Bode, and Selke are named.) These valleys serve to assist commerce between the mountains and plains. (Commercial towns pointed out and named.) The most celebrated water-magazine of the Hartz is the high marshes in the Brocken. These marshes hold the snow and water; and for the watering of all the neighboring regions, hundreds of streams flow from the marshes. When they dry up, as they sometimes do in summer, there is a drought. This is quite common in the Upper Hartz. (Comparison with experience in Eisenach.)

VII. Inhabitants. The occupations of the people are here described in full, including coal-making, lumbering, mining, caring for the cattle, followed by a description of their social habits and homes, and of their worship before and after the day's work. Drawing of the Hartz district, first on the blackboard, and afterwards on the slate.

Third Step. — A. Putting together of material already given.

1. Comparison of the two parts of the Hartz, — Upper and Lower Hartz. Northern and southern boundary; also that of south-west and south-east.

2. Comparison of the Brocken and Ramberg.

3. Rivers that flow from the Hartz. Compared as to direction, etc.

4. Location and name of the cities and towns which lie on the border of the mountains, and comparison of them with each other as to situation, importance, etc. (Sachsa, Goslar, Harzburg, etc.)

5. Location and comparison of the mountain towns. (Klausthal, Zellerfeld, etc.)

B. Comparison of the Hartz Mountain district with the Thuringian Forest and the Rhone district. The last two mountain districts are supposed to be known to the children.

1. The situation, extension, and height of the three districts, also their highest peaks.

2. The construction of the three systems.

3. Rivers and lakes.

4. Productions. (*a*) forests, (*b*) agriculture, (*c*) mines.

5. Cities and towns; commerce.

6. Climate.

Fourth Step. — (B, above given in the third step, may be called a part of the fourth step.)

A. Writing in a book in systematic order the headings of subjects given in the third step.

B. Drawing of the Hartz from the map in the atlas.

Fifth Step. — (Following tasks given.)

1. Make a relief map of the Hartz.

2. Draw a profile map of the northern part of the mountains.

3. State how we reach the Hartz from Eisenach.

4. How can one travel through the Hartz, and visit

not only the most beautiful points, but also the industrial districts.

5. Wherein are the Hartz and Thuringian Forest alike?

6. Wherein are these districts like the Rhone?

7. Prospect from the Brocken. Compare with the prospect from the Wartburg.

8. What cities mark the boundaries of the Hartz?

9. Why does the Hartz when seen from the north appear to be higher than when seen from the south?

10. Speak of the characteristics of the Hartz.

The Lever.

First Step. — We have lately spoken about the shopkeepers' scales. What are these scales called? You have perhaps seen a balance whose arms were not equal. You have seen carpenters and masons raise a heavy weight by means of a crowbar. You have also seen a nut-cracker or the shears of an iron-plate worker. How are the arms of these shears in comparison with those of common shears? You may have wondered why the arms were so long, or why one must press down at the end of the crowbar. We will in this lesson try to learn the reason.

Second Step. — I have here a metre-stick. How is it marked? I put the middle of the stick upon this edge and you see it balances, or is in equilibrium. What have we made of the stick? An equal-armed lever.

If I put 100 grammes upon one end, how much weight must I put on the other end? Yes, an equal weight. Now I place this stick so that one part measures 20 cm. and the other 80 cm., that is, one part is four times as long as the other. The stick is no longer in equilibrium. Why not? One arm is too long. I place a stone upon the shorter arm, and shove it along until the stick is in equilibrium. Upon each end of the stick I place as before 100 grammes. What happens? The stick is no longer in equilibrium. Where is the weight too great? What must I do so that the stick will balance? I must either take away some of the weight here, or place more weight there. We will try the first way. 50 gr.; too much. 25 gr.; that is just right, and now there is equilibrium. If I name the weight on the shorter arm weight, and the weight on the longer arm power, how much power must I use to hold the weight in equilibrium? One-fourth part of the weight. And how much now (placing stick differently)? A little more than one-fourth part. What is the reason for the difference between power and weight? How much longer is the longer arm than the shorter? Four times as long. How much less than the weight is the power? One-fourth as great. Or how many times greater than the power is the weight? Four times.

Third Step.—If I make the longer arm only twice as long as the shorter arm how many times less than the

weight will be the power to produce equilibrium? Twice as small, or half of the weight. We will see if that is correct. I have here a stick 60 cm. long, — an old ell: I lay it upon the fulcrum so that the shorter arm with 100 gr. weight is 20 cm. long, and the longer arm is 40 cm. long. We put the 25 gr. again upon the longer arm and we see that it is too light. Why? What part of the weight should the power be to balance it when the longer arm is four times the length of the shorter arm? Four times. In this case how is it, since the longer arm is only twice as long as the shorter arm? The power must be half the weight. How much, then, of the weight must I take off? 50 gr. Now equilibrium is again established. If this arm should be three, six, ten times as long as the other, what part of the weight should I have to put on to preserve the equilibrium?

Fourth Step. — We have seen that (*a*) if the arms of the lever are of equal length the power and weight must be the same to maintain an equilibrium, and (*b*) if the arms are of unequal length the power and weight are unequal. We have discovered the following law: —

The longer the arm of a lever is, so much the less power must be used to keep in equilibrium a weight upon the other arm; or, more exactly, unequal armed levers are in equilibrium when the power is contained in the weight as many times as the weight arm is contained in the power arm.

(The pupils write out this law in a book with a simple drawing of the experiment; also with a drawing of iron-plate shears, and of a crowbar in position for raising a weight.)

Fifth Step. — Now we will again recall how the mason raises a heavy stone. What does he put under the crowbar? Where does he put the stone? At what end does he take hold of the bar? If this end is ten times as long as the other, how much more power does he exert in moving the stone than if he did not use the lever? Give the reason why the iron-plate shears have such long arms and such short blades, while paper shears have short arms and long blades? If anything hard is to be cut by the shears where ought it to be placed? Near to the connecting pin. Why? What part of the pump-handle is the longer? Why has the clawhammer such short claws and such long arms? Application to scales for weighing.

CHAPTER XIV

REFORMS

Although the educational system of Germany in many respects has remained unchanged for two centuries, it must not be supposed that great changes have not been made recently, or that no important reforms are contemplated at the present time. A brief review of some of the past and proposed changes, in respect both to school organization and to methods of instruction, may be interesting to teachers, and may throw some light upon certain proposed reforms in America.

Supervision.

Formerly the school inspectors, especially in the country, were nearly all clergymen. This plan worked an injury in two ways: first, in not giving the schools the benefit of skilled supervision by men who could give their full time to the work; and secondly, in placing the schools too closely under the direction of the church. Since 1872, when a law was promulgated asserting the predominant rights of the state in the control of the schools, a great change has been effected in the work and personality of the supervisors or inspectors. Everywhere the demand is heard for professional supervision. Superintendence of the

schools, and the appointment of men who give their full time to the work of supervision is rapidly extending thoughout the empire.

There is considerable controversy over the relations which exist between the church and the school. A demand is made on the one hand for an entire separation of the two institutions, and on the other hand for that kind and degree of control which the church formerly held over the schools. In Prussia the clerical party is strenuously endeavoring to abrogate the decrees of separation made by Minister Falk twenty years ago, some even going so far as to urge that the church have entire charge of the elementary education of children. If the progress of events during the past century is any criterion of the future, it would seem that the entire assumption of the charge of the schools by the state or municipal governments is only a matter of time.

Relations between the Church and School.

While increased powers have been given to local governments in certain directions, the state holds firmly to its prerogative of determining the quality and kind of instruction that shall be given in the schools. It was early seen that the appointment of teachers could not be left safely to local boards, as was done in Würtemberg and other states; and the powers which the local boards once held in this regard were transferred to the general state governments. The fixing of teachers' salaries, also, is

Lessening of Local Powers.

not in the hands of town governments as was formerly the case. It was found that where towns had control of appointments and compensation of teachers, the schools were frequently put in charge of the lowest bidder. Great progress was made in the direction of good teaching when both of these prerogatives were placed in the hands of the state.

The present high professional requirements[1] for teachers of the elementary schools in Prussia were made in 1872. Since then the number of normal schools has increased from 74 to 115, and the number of normal-school pupils has nearly doubled. As the result of this reform, practically all the teachers of the lower schools are professionally trained men and women.

Elementary Schools.

For three centuries pedagogical lectureships and seminaries have been connected with the universities. Within the past hundred years these means of preparing teachers of secondary schools for their work have proved inadequate, and various attempts have been made to supply the want of necessary practice. Gedike in 1787, and Herbart in 1809, founded seminaries for practice; and since then many institutions of the same kind have been established, mainly in connection with universities. Prussia, in 1826, demanded a year of practice (*Probejahr*), in addition to the state examination, for all high school

Teachers of High Schools.

[1] See Page 7.

candidates. Gradually this requirement extended to the neighboring states, until in 1890 it was quite general throughout Germany. In Saxony the question how candidates for the position of teacher in high schools may secure the necessary practice has received the attention of schoolmen for several years. Some say it is best for such candidates to attend the normal schools for elementary school-teachers. Others favor the plan of establishing seminaries in connection with existing high schools. Meanwhile the Prussian Government has ordered the establishment of seminaries for practice in every province [1] — a requirement which will be likely to extend to other states.

Conference on School Reform.

Within a few years conferences of many kinds have been held in every part of the empire for the purpose of considering questions of school reform. Perhaps the most important of these conferences was the one called by the Government of Prussia to meet in Berlin in December, 1890. It consisted of forty-four men — representing various educational interests, many of them being in active service in schools or universities. The most important conclusions of the conference were as follows: —

1. Only two kinds of public schools to exist, — the gymnasia and non-classical schools (*Oberrealschulen* and *höhere Bürgerschulen*). A common school for these two kinds of schools is considered undesirable.

[1] See page 10.

2. A reduction of the time hitherto devoted to Latin and Greek. The Latin composition to be dropped. Greater emphasis to be put upon the German language and upon German history.

3. More hours for study in school, and less home study.

4. A thorough professional training for all classes of teachers.

5. Greater attention to be given to bodily exercise and hygiene.

6. Drawing to be increased in the gymnasia, and English to be made obligatory whenever it is possible.

7. The placing of the *Realschulen* and *Gymnasien* on a more equal footing in respect to entrance upon university and technical high-school courses.

All of the above recommendations may not be carried into effect, but their promulgation has already been followed by discussions which must result in important changes. All the subjects embraced in the conclusions are being warmly discussed in associations of teachers, and in the public press. Petitions and counter petitions are being forwarded to the government, many of which refer to the relative value of classical and non-classical learning.

One of the recommendations, certainly, it will be difficult to carry into effect, — that relating to the abolition of the *Realgymnasium*. This change would materially affect nearly three hundred towns of Prussia

which have only one high school. In these towns the proposed reform threatens the existence of the *Realgymnasium, Progymnasium.* There is already widespread dissent from the decision of the council in this respect, and some modification of it will doubtless be made by the government.

Elementary School Reform.

The recommendations of the Berlin Conference, above alluded to, affect high schools mainly. But reforms in the elementary school system are also being discussed vigorously in various quarters. What teachers themselves think in regard to such reforms is shown by the vote of the Berlin Teachers' Congress in its session of 1890, affirming that the great defects of the elementary school system are, (1) too many pupils to a teacher, (2) too many subjects of instruction, (3) supervision by non-professional inspectors, (4) insufficient remuneration of teachers, (5) indefinite regulations respecting the maintenance of discipline.[1]

School Terms and Vacations.

Some complaint is made of the present inconvenient and irregular times of school terms and vacations. In Bavaria the school year for the *Realgymnasium* was changed in 1890, so as to begin the school year Sept. 10, and end it July 14. It is thought that this change will extend eventually to all high schools, and perhaps to all schools throughout the empire.

[1] London Journal of Education, August, 1890, p. 418.

No observer of the schools or of the life of the people in Germany can fail to note the great changes that are being made in the German language, both spoken and written. The schools and public press are united in a strong effort to banish from the language all foreign words, or words that are not of a distinctly Germanic origin. Societies also are being formed in all parts of Germany whose object is to purge the language of foreign idioms and words. As a consequence, newly coined German words are gradually taking the place of words which are foreign in form and origin.

Changes in the German Language.

Great efforts have been made recently to check the alarming increase of near-sightedness. Statistics show that more than half of the students of the upper classes of the high schools are near-sighted. The attention of school authorities has been called to the various causes of near-sightedness, and in some cases rules have been made looking to their removal. Poorly lighted rooms, excessive amount of home study, and German printed text-books are the chief causes alleged of near-sightedness. The suspension from office of Bismarck, who resolutely opposed changing the German text to Latin text, opens the way to the removal of one of these causes.

Near-Sightedness.

For the purpose of making the efforts of reformers more effective, societies have been organized whose purposes vary to a considerable degree. There are

societies whose aim is simply to incorporate new branches of instruction in the course of studies; there are other societies whose object is, in a general way, to improve the schools under their present form of organization; and there are societies which advocate a radical reform in the entire system of schools, casting aside the traditions which have held the schools within certain lines during the past century. Two societies of the latter kind were formed in Berlin in 1889, under the leadership of strong men, and we may naturally expect to see some results of their efforts. The reforms advocated by one of these societies at a meeting in 1889,[1] were: (1) Placing of all high schools upon the same footing. (2) Making German the central point of instruction. (3) Better school hygiene and greater care for the physical development of youth. (4) Equal privileges for *Realschulen* and *Gymnasien* as preliminary conditions for a thorough school reform. (5) Better preparation of teachers. (6) Simplification of examinations. (7) Greater sharing of the duties and rights of teachers on the part of parents. (8) Uniting of all movements in school reform. (9) An independent educational administration under the guidance of professional men. (10) A law relating to instruction. (This is in Prussia, where there is no general school law.)

Societies for the reform of German Schools.

Perhaps the most striking changes that have been

[1] Reported in *Päd. Jahresbericht*, 1889, p. 535.

advocated by any educator of good repute are contained in a book written by Dr. Göring.[1] The prominence of the author and the influence of the society[2] which he represents will doubtless induce many people to read the book.

The new German School.

The fact that the *Cultusminister* of Prussia, Dr. von Gossler, has permitted the book to be dedicated to him will not lessen its influence among Germans.

The following brief extracts will give the reader a general idea of the author's views.

In the "New German School" there are to be three grades or courses. The elementary school course is to extend from the age of six to fourteen years, and is to give a general preparation for the duties of life. The second course is to extend from the age of fourteen to sixteen years, and is intended to be a preparation for military schools, for technical trades, and for business. The third course of four years is to prepare for the University and Technological School.

Home tasks are not to be assigned, and written exercises are to be prepared in the class.

Corporal punishment is not to be administered in school, all misdemeanors being reported to the parents.

There are to be no public examinations; but parents are to be received as guests at any time. There are to be no vacations, excursions of various kinds to take their place.

[1] *Die neue deutsche Schule, von Dr. H. Göring. Leipzig*, 1890.

[2] *Der allgemeine Deutsche Verein für Schulreform.*

Sentiments of Religion, duty, truthfulness, and patriotism are to be inculcated, not only theoretically, but practically in the life of the school.

Games, gardening, handiwork, gymnastics, and military drill are to have a prominent place, especially afternoons, forenoons being given to theoretical subjects of instruction.

In the first year of the elementary course, the time for instruction per day is to be limited to one, two, and three hours, separated into periods of about twenty-five minutes each, with intermissions of ten minutes each between the periods. Oral instruction in nature studies is to be given during the year, with such other observation lessons as will prepare the child for subsequent studies. Instruction in reading and writing will begin in the second year; religious instruction, nature studies, geography, history, — especially that of modern times, — mathematics, the elements of physics and chemistry, drawing and singing, are to be pursued throughout the course. Instruction in modern languages — English and French — is to be given to those pupils who intend to enter the higher grades.

In the second, or intermediate course, there is to be taught the foundation of political economy, the elements of physics and chemistry, natural history, modern German literature, religion, German history, modern English and French literature, drawing, music, and such technical subjects as are needed to prepare the students for technical trades or for business.

The highest course is to embrace subjects now pursued in the university, placing especial emphasis upon modern languages and literature. German translations of the ancient classics are to be read. Only those students who pursue a special course in theology or philology are to receive instruction in Latin and Greek.

It should be said that the "New German School," which in some respects departs greatly from the schools of the present, is not likely to exist in theory only, since money has been subscribed for the establishment of a school having all the essential features recommended by Dr. Göring.

CHAPTER XV

AMERICAN AND GERMAN SCHOOLS

In this chapter I shall attempt to answer the question which is frequently asked: How does our system of schools compare with that of Germany, and what useful lessons, if any, relating to public school education may we learn from that country?

Influence of Example.

First, however, there is to be met the question whether a knowledge of the educational practices of other nations will help us to improve our system and methods of education? Upon this question there seems to be a wide difference of opinion. On the one hand it is asserted that no two nations have the same conditions of life, — either social or civil, — that the schools of a nation are a growth peculiar to itself, as are its laws and customs, and therefore that they can be perfected only by trial and experience under the peculiar conditions of their origin and existence. On the other hand it is urged that the universality of the needs of men as human beings should be recognized; and as the highest end of education is to make good and wise men rather than citizens of any particular state, or workers at any given calling,

there should be some common means pursued by which this highest and common end is reached. A knowledge of the common means thus employed serves a double purpose: first, in proving the efficacy of true theories of education; and secondly, in guarding against false ones. Thus the successes and mistakes of one people may be used for the benefit of all others.

The history of education shows that this principle of co-operation or the transmission of theories through their embodied practices has been a potent factor in the development of true methods of education. It was recognized in the times of Ratich, Comenius, and Pestalozzi, when hundreds of teachers from various countries flocked to see the practical working of theories which were not fully understood or believed. And when we reflect upon the influence of the imperfect and crude attempts of these men to embody in practice theories which, without such practice, might have fallen upon dull ears, — an influence which has extended throughout the civilized world, — we cannot resist the conclusion, not only that it is useful for one nation to study the practices of other nations, but that it is the surest and best way of extending and perfecting the science as well as the art of education.

In seeking to find where we may learn most of that which will be useful in improving our schools, we naturally turn to the countries where lived the great reformers whose names I have just given, and where

the fiercest pedagogical conflicts have been waged. In these countries — Germany, Austria, and Switzerland — we find a system of education scientific and thorough in its character, broad in its scope, and uniform in its practices. So good, indeed, are the schools of these countries that they are constantly visited by foreigners who are either drawn thither by professional interest, or sent officially to study their system and to observe their methods.

Educational Systems of Germany, Austria, and Switzerland.

Nor are the interest and zeal in behalf of the schools new to the German people. Ever since the Reformation, the government has encouraged the establishment of institutions of learning of every kind to such an extent as to call to the service of elementary education the best thought of the country. True, that thought has been erratic and at times abnormal in its application, yet it has always been vigorous and powerful, whether exercised in the severe, classical formalism of Trotzendorf and Sturm, or in the free naturalism of Comenius and Basedow. The experience, therefore, of Germany in the management of her schools has been a thoughtful one; and as such it commands our respect, and invites our attention to some features of their system of schools in contrast with some of our own.

Influence of Educational Leaders.

I. ORGANIZATION.

Whatever may be said of the superiority of natural over acquired qualifications for the teachers' calling, no one, I suppose, will doubt the general statement that the efficiency of teachers is enhanced by special preparation for their work. That being conceded, we turn to inquire how much so-called professional preparation is demanded of teachers in the United States. From a recent report of the Commissioner of Education[1] it will be seen that in California, Illinois, Kansas, New Hampshire, New York, Massachusetts, Pennsylvania, Vermont, and Wisconsin — the only States making full reports — only one teacher out of every seventeen was in 1886 a graduate of a normal school. A larger proportion, or about twelve per cent, of all teachers employed are reported as having attended a normal school. These States, doubtless, have other training-schools in which some of the teachers have received more or less professional training. Making a liberal allowance for the number attending such schools, and for the probable advance that has been made, it is safe to say that not more than one-fourth of the present teachers of the above-named States have had any professional preparation for their work. The character of elementary education in these States is certainly as high

Qualification of Teachers.

[1] Report of 1886–87, p. 453.

as it is in the rest of the Union. It may be said, therefore, that as many as three-fourths of all the teachers of this country at the present time entered upon their work without the slightest theoretical knowledge of the science or art of teaching. In other words, a majority of the people of the country regard teaching as less of an art than carpentry or horse-shoeing, for which some preparation at least is thought to be necessary. When it is considered that a large proportion of these untrained teachers are new to their work every year, the seriousness of the matter becomes apparent. The enormous waste of money which is occasioned by the misdirected energies of this army of novices is of little consequence beside the irreparable injury which their experiments and mistakes cause to the children.

To raise this low standard of requirements for teaching to the standard which Germany has set[1] will be no easy matter; but that it must be done before we can seriously make a comparison of the schools of the two countries, or even before we can claim that there is a profession of teaching in this country, is beyond question.

Our normal schools should demand a higher degree of scholarship for admission than they now demand, or else their courses of study should be broader and more extended than they are in most States of the Union. There should also be

Normal School Course.

[1] For Germany's requirements see page

given in the normal course a greater opportunity for professional practice than is now given. Graduation from such a course, or its equivalent, should be required for the position of teacher in all elementary schools. Of the secondary school teachers there should be demanded, in addition to graduation from college, at least one year of professional training.

Needful Requirements for Teaching.

To establish this high, or an equally high, standard of requirements for teaching is the duty of the state. Wherever in the state there is inability to reach it, assistance should be given; and wherever in the state there is unwillingness to reach it, force should be used. If such a policy should be opposed on account of a fear of centralization, let it be remembered that centralization is dangerous only as the central power usurps or takes away individual and local rights. It is plain to see that the delegation of this power to the state protects in the best possible way the rights of both individuals and separate localities.

Efficient service depends not only upon intelligent effort, but also upon a continuance of that effort. A frequently changing personality in any department of industry means a loss in unity of purpose and effort, and consequent weakness. This is especially true in teaching, which requires united and harmonious efforts toward a common purpose. If we step to-day into any one of the

Permanence of Teaching Force.

one hundred thousand schoolrooms in Germany, we shall find a teacher who feels that he is engaged in his life-work, and in a large proportion of those schoolrooms we shall find teachers who have the practical assurance of their government, that their continuance in office depends only upon good behavior and faithful service. Very rarely are the permanently elected teachers changed from the position to which they are appointed, and more rarely still are they dismissed from service.

Aside from the efficiency of these professional workers, their permanence of place makes their efforts felt in a way not known in a system of constant changes like ours. From recent statistics[1] we learn that an average of twenty-six changes occurs in the United States yearly in every one hundred teachers' positions; that is, the average length of the teacher's service is less than four years. In some quarters the rule is to "make a change" every term, the term consisting of ten or twelve weeks. So accustomed are we to a want of permanency in the teacher's position, that we regard it not out of place for a young woman to make it a convenient waiting-place for matrimony, or for a young man to use it as a stepping-stone to one of the so-called learned professions. What other business would permit such a large "tramp" element to impair its efficiency, or lower its standard of effective usefulness?

[1] Report of U. S. Commissioner of Education, 1886–87, p. 71.

In this matter, as in that of the qualifications of teachers, the state should take a decided stand. Having demanded of teachers the best possible preparation for their work, the state should give them, or oblige the municipalities to give them, a permanent tenure of office during good behavior, good health, and professional faithfulness. In this act of justice to teachers there is found the only safeguard against the evils of frequent changes of teachers on the one hand, and of political wire-pulling on the other.

Tenure of Teacher's Office.

A good plan of studies is to the teacher what the chart and compass are to the navigator. By its aid progress in the right direction may be measured; without it there is likely to be much work done which is aimless and useless, if, indeed, it is not absolutely injurious. The making of a good plan of studies implies not only a knowledge of the subjects to be studied, but also such acquaintance with the powers and capacities of the growing mind as to know the proper sequence of subjects, and the relative amount of work to be done in successive periods. Such knowledge, it must be admitted, is scientific, and can be acquired only by long and varied experience.

Plan of Studies.

In many parts of the United States the arrangement of a plan of studies is left to the local board, — a board which is made up of men who can, it may be, run a farm or factory, but who have no special fitness to direct teachers in respect to subjects of study. As a conse-

quence there are many towns which have no plan of studies for their schools, absolutely no guide to what is expected to be done, beyond the wishes of parents who are ambitious for their children to go through or over many books. This may not be less harmful than a faithful adherence to the requirements of some plans which are made by persons wholly unfit to make them. And all these hindrances to good and systematic work are but little worse than the constantly changing courses of studies which ambitious school committees, superintendents, and principals are fond of putting out as essential improvements over what has preceded, or as proofs of their ability as reformers.

Instead of these doubtful guides, which are as likely to be incorrect as correct, and which are subject to frequent changes, there should be a general plan for each grade of schools, made and sanctioned by high professional authority, and authorized as a guide for every school in the state. These plans should be subject to such enlargement and explanations as local superintendents or principals may think necessary. Thus we should follow in the main the policy of Germany, whose plans of study may be said to be the result of the best educational thought of the state: on the one hand so well defined as to make the teacher's duty clear, and on the other hand so unrestricted as to leave much freedom and independence of action.

In estimating the value of an educational system, the attendance of children upon the schools should not be left out of the account. No school system can be said to be good which is not supported by laws requiring a certain standard of education for all. School Attendance.

How far the practice of many parts of our country is from this standard appears from statistics which show that in twenty-one States there are no compulsory laws of school attendance, and that in other States, according to the Commissioner of Education,[1] "in many instances the compulsory attendance law, if not actually a dead letter, is practically so." In many of the Northern States where the percentage of attendance is the highest there is gross neglect, not only in enforcing the laws of compulsory attendance upon the schools, but also in providing proper truant schools. This neglect is due largely to the fact that the execution of the laws is left to local authorities, who for political and social reasons fail to do their duty. Members of the school board do not stand a good chance for re-election who by an enforcement of the law entail extra expense upon the town; and they are few, especially in country towns, who are willing to proceed against a neighbor, or a neighbor's children, in case of a violation of the law.

To prevent the evil of illiteracy, as well as the enor-

[1] Report, 1886 87, p. 56.

mous waste of money, which our records of school attendance imply, is a matter of no small concern, and should receive the immediate attention of both state and nation. It may not be possible for us to adopt the same rigorous policy of coercion which Germany enforces with her strong military spirit, and with her complete state police system. But that we should follow her example of protecting the rights of children, so far, at least, as to make school attendance compulsory up to a certain age, must be admitted, especially when we consider the dangers of an ignorant citizenship in a government like ours. Having made these compulsory laws we should see to it that the means of executing them are as effective as are the means of executing other laws upon the statute book.

Compulsory Laws.

Experience has proved the necessity of wise supervision in most departments of labor; and nowhere is the necessity more apparent than in a complex system of schools, involving various interests and requiring great technical skill. Germany has for many years observed this principle in the management of her schools, and the results clearly demonstrate its importance. In that country the organization of the schools, the examination of teachers, the criticism and direction in methods of teaching, in short, all duties involving wisdom and skill, are given mainly into the hands of professional men.[2]

School Supervision.

[2] For details in the System of Supervision, see p. 4.

No uniform method of school supervision is practised in this country; each state, and in some states each town, determining the methods to be employed. The schools of most of the cities, and of some of the large towns, are well supervised by skilled superintendents, who are appointed on account of their superior qualifications. The weak points in the supervision elsewhere, which means, of course, in the larger part of the country, are quite apparent to all who know the worth of intelligent direction in school affairs. In some sections there is absolutely no supervision of the schools other than what is done by members of school boards, who, as a rule, have little time to attend to the duties of their office, and who are likely to have neither natural nor acquired fitness to criticise and direct the teachers' special work. In other sections county superintendents are either appointed by a board, or elected by popular vote. Some of these persons are, doubtless, efficient supervisors; but their field of labor is frequently so large as to prevent their service from being felt to any appreciable degree in the schools. In general it may be said, therefore, that a greater part of the school supervision of this country is ineffectual because of the largeness of the supervisor's field of labor, or of his dependence in election to and retention in office upon the will of the people, or of his want of proper qualifications to perform the duties of his office.

Important as is a recognition of the value of skilled

or professional supervision, the perception of its province and limitations is no less so. Germany's policy of having the work of teachers guided wisely, without having it cramped and narrowed, is a policy which America might adopt with profit to her schools. Skilled supervision, which should be provided by law, implies wisdom, — the wisdom which can be possessed only by *professional* superintendents.

II. TEACHERS AND TEACHING.

Having considered the conditions under which the schools are maintained, and some possible reforms of those conditions suggested by Germany's experience, we have next to inquire what lessons intimately connected with the work of the schoolroom may be learned from Germany's practice.

The central object of interest and of profitable study is the teacher, whose influence in educational affairs is deservedly strong. This influence is not newly acquired. It is an inheritance from the past, a transmission of powers won by the courage, zeal, and intellectual strength of the teachers of three centuries. Beginning with the Reformation, — the time from which the present school system of Germany dates, — the teacher has filled a prominent place in all educational reforms ; not only in promulgating new philosophies and methods of teaching, but in putting into

Influence of the Teacher.

practice new courses of study, in calling forth for education the active interest of princes and people, and, whenever it was necessary, in shaping legislation relating to education both high and low. It is this inheritance of influence in educational affairs into which the German teacher of to-day has come; and most worthily, as I believe, does he use and keep it.

He does not wait for writers of occasional and sensational articles to shape public opinion, — writers whose criticisms of the schools rest on no knowledge of their condition, and whose conception of their needs has not the basis of philosophy or experience. Neither does he allow newly fledged members of school boards to initiate schemes of reform which may not have merit enough to last through a single administration. The German teacher does not take his cue from such men, nor does he wait to take his cue from anybody. He prefers to have the first as well as last word in all questions of reform, whether it be in methods, programmes, or organization. To him belongs, almost exclusively, the privilege of educating the public in school affairs through the public press. He uses professional association meetings, of which there are many, in discussing questions of reform, and he exercises the right of petition to the government all the more readily because he knows that his petition will receive consideration.

The present notable measures of reform of higher education had their rise in associations of teachers who

formulated their opinions two years ago in a monster petition of over twenty thousand signers to the Prussian Diet. Whether it was this petition which caused the appointment of the recent commission in Prussia, it is hard to say; yet there can be no doubt that the schoolmasters themselves began the discussion of questions considered in the conference last December, and the government's confidence in their ability to pass judgment upon the subjects presented was shown in the large number of schoolmen appointed to serve on the commission.

The influence of the teachers in inaugurating reforms and in guiding legislation is due partly to the fact that they are, upon main issues of administration, clear and united, partly because they insist upon being heard, and partly because their action is pointed and systematic. I well remember the earnestness and point of a discussion carried on by a village association in Southern Germany. The association consisted of eight men, — all the teachers of the town. The subject was manual training. Two or three meetings had been held previously, and the conclusions of the association were carefully noted in a series of statements, after being discussed and voted upon. These conclusions were to be sent to a higher body which was to formulate all conclusions received, and print them in what is called a Year Book. Who can doubt that conclusions thus reached would and should have great weight in the counsels of the Nation?

It is influence of this kind which our American schools most need. Not only do teachers fail to make themselves felt, as they should be felt, in certain features of school legislation, but they are obliged frequently to give way to the politician in matters purely professional. In some places promotions are made, examinations are conducted, and even courses of studies are arranged, by persons who can lay no claim to professional knowledge.

Whatever the cause of the teacher's want of influence in directing educational affairs in this country, certain it is, that so long as the schools are controlled by politicians, independent of professional advice, there will be poor schools and a waste of money. It is to be hoped that the practice of Germany in heeding the advice of teachers in all matters relating to education will in good time become the settled policy of all parts of this country. That time may come when the high requirements for teaching already spoken of have been fully met.

I have spoken of the teacher's influence in Germany in what may be called outside affairs. In the schoolroom his personality is even more marked. Here we learn the secret of his power, which is that he is in earnest in carrying out a purpose. That is what most impresses visitors from abroad. They may not always think the purpose a good one; but the value of a well-defined purpose is clearly seen, especially when behind that purpose — as is generally the

Personality of the Teacher in the Schoolroom.

case in Germany — there are both intelligence and professional training. Ask any teacher of the elementary or secondary schools in Germany the reason for any particular method or practice, and you will find him ready with an answer, given in a way which leaves no doubt as to his sincerity, even though he does not convince you of the wisdom of his course.

Characteristics of Teachers.

One general purpose quite manifest in schools of all grades is that of leading the children to think for themselves by the use of objects and pictures, and by questioning. The latter feature of the recitation is particularly noticeable. The questions asked are not strictly Socratic, but they are of such a character as to impress or to develop ideas. When they are of the latter kind they are called "development questions," leading the pupils to pass from the known to the unknown, or to discover an effect from a known cause.

Another characteristic of the work of German teachers is the frequency of giving reviews. The salient points of previous lessons are frequently reviewed, especially those points which have some relation to the subject in hand. The reason for some of the reviews seems to be twofold — first, to refresh the pupils' memory, and secondly, to present all parts of a given subject in their logical relation.

In all information studies — history, geography, reading, and natural history — the teachers show that

they have a large fund of information which is always ready for use in the recitation. The necessity of the teacher's proficiency in this regard is, perhaps, not so great in America where the text-book is supposed to give much needed information; yet the great interest which is awakened in the recitation whenever such information is given by the teacher, and the increased confidence and power which such communication gives, are advantages which our American teachers would do well to consider.

Perhaps the most noticeable difference between recitations here and in Germany, is in the manner of the teacher. In Germany the teacher always stands and manifests a vigorous, watchful interest, both in the subject matter and in the pupils. I would not have our teachers adopt the same vigorous means of securing interest and exactness as are sometimes employed by German teachers, but I wish they could have some of their enthusiasm in the schoolroom.

Apparatus.

There should be provided by the state or municipality far more apparatus than is now generally provided for the schools. In large graded schools the apparatus should be conveniently located for use in a room provided for the purpose.

Museums.

There should be in convenient places for the benefit of teachers, museums containing all kinds of apparatus, text-books, and reference books. It is to our shame that we have not long ere this

established institutions of this kind, which have been found in other countries of such great practical value to teachers.

Needed Changes in Subjects of Instruction.

It may not be advisable to include in our courses of studies all the branches of instruction which are taught in Germany; but, even in this respect, we may get some assistance from German courses. Nature and elementary science lessons, for example, have as prominent a place in the elementary school programmes of Germany, as arithmetic or geography have, and no good reason can be given why they should not have equal prominence in our programmes. With the possible exception of reading and writing they are, when properly taught, the most valuable subjects in the elementary school course. Two or three hours a week, therefore, should be given to lessons upon plants, animals, and minerals in the lower and middle grades, supplemented by elementary physics or chemistry in the higher grades.

The interest which the German boys of the people's schools manifest in the study of geometry, is an indication of the place which that study may have in our grammar school course, first, in supplementing the study of form in the lower grades, and secondly, in accompanying the study of arithmetic in the higher.

The introduction of these subjects of instruction would necessitate lessening the amount required in other subjects, and that can best be done, perhaps, in

arithmetic and geography, which are at present overloaded with useless details.

When we consider the time that is frequently taken to complete the grammar school course, and the apparent advantage which German children possess in having a short preparatory course for the high school, it seems advisable to rearrange our classification or courses of studies, so as to permit pupils to begin earlier than they now do the direct preparation for a special classical or scientific course.

Following the lead of Germany in placing great emphasis upon the study of the mother-tongue, we should do far more in English in all grades than is generally done in respect to both language and literature.

Again, more time than is now generally allowed should be given in our high schools to a single science. Instead of a one year course in chemistry, for example, there should be a course of three or four years, so as to give time to develop a scientific spirit and to make the study of practical worth.

And finally, Germany's example of giving all the children of the schools a regular, methodical, and continuous course in physical training may well be followed by us.

Elements of Weakness in German Schools.

In what I have said of the German schools I have felt called upon to emphasize their good features only. With such elements of strength, we should expect to find some elements of

weakness. These faults have their origin in the ends or purposes of a people who are intellectually strong, and whose political safety lies in keeping up a military spirit.

Few text-books are used in the elementary schools of Germany, — fewer, I believe, than is good for the pupils, — *first*, because a knowledge of the use of books and a good habit of using them are most valuable to people of any walk in life, and *secondly*, because a proper use of them prevents too great dependence upon the teacher. The programmes of graded schools are so arranged as to prevent pupils from studying independently and without interruption in school; and the constant talking of teachers, however stimulating it may be to pupils, is not without its bad effects. Moreover, the demands upon pupils, especially in the high schools, are frequently so great as to make school work a grinding burden, and so intensive as to preclude opportunities for general culture.

Again, so far as I could learn, the cultivation of the will is sadly neglected in many of the schools of Germany. The higher forms of self-control and self-respect are lost sight of in discipline, and obedience is often exacted by the severest means. In these particulars, at least, the teachers of Germany can learn wisdom from us. Perhaps they will be willing to do so when the menacing armies upon either side of their country are disbanded, and when circumstances no longer com-

pel them to train their children for the stern conflicts of war.

One word, in closing, upon our own prospects for the future: I have said that our schools are poor in comparison with the schools of Germany. And yet, I believe I am not inconsistent in saying that the best we have are better for us than the best that exist in Germany would be. The trouble is, our very good schools are far too few. Instead of finding good schools everywhere, as we do in Germany, in the country as well as in the city, and in all parts of each, we are obliged in this country to make a hunt for them, even in the most favored places. When they shall be found not the exception, but the rule, not depending upon exceptional conditions, but resulting from a wisely planned organization, then we shall not have to sit at the feet of Germany as learners, but we can bid the teachers of that country come to us, and learn how to train boys and girls into intelligent, self-respecting, self-ruling, and God-fearing men and women. It is for American teachers to work steadily toward the accomplishment of this much-desired end.

Condition and Prospects of American Schools.

3477 5

LIBRARY OF CONGRESS
00025540256